THE CULTIVATOR.

THIRD] TO IMPROVE THE SOIL AND THE MIND. [SERIES.

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The Cultivator & Country Gentleman.

Soiling Cattle---Sawdust for Manure.

I would like to see in the Co. GENT. more articles on soiling cattle. Can't you induce men experienced in that way of feeding stock, to give their mode of feeding, kinds of fodder used, their opinions as to its practicability, &c., on farms where all the land is capable of being plowed, and is worth too much to lay in pasture? I have purchased a seventy acre farm, naturally good land (worth $75 per acre,) in rather poor condition, by having the hay sold from it the past three years. It is now, and has been for quite a number of years, nearly all in grass. About fifteen acres of as good land as any on this place, has, for thirty years or more, been used as a pasture. It is now considerably run up to briars and weeds, and don't produce one-half the feed it should. What shall I do with such a piece of land? Can I afford to pasture it, or shall I put my cows up and soil them? I want to make manure to bring all my land up to what it should be; can I do it any other way but soiling? I have read J. Quincy, Jr.'s work on soiling, and other works, such as Ten Acres, which speaks in favor of that way of keeping stock; still I want to hear from men of experience, those that are now practicing that way of keeping their stock.

I have a good muck bed one and a half miles from my barn; will it pay to draw that distance? Pine, chestnut and oak sawdust, can be had near. Will it make good manure by using it as a litter for horses and cows? I. J. RUSS. *Pepperell, Mass.*

We should be glad to receive the results of experience on the subject of soiling, of a practical character—not the result of vague guessing, but of accurate trial. The great objection is the increased labor and attention involved—every farmer likes to turn his animals out where they will take care of themselves. The only way to obviate this objection is to show, by calculation or actual experiment, that a saving will result—if this can be done, thorough business men will adopt it. To assist in approximate estimates of this kind, we suggest the following: Soiling would obviate the necessity of interior division fences. On these 70 acres about one mile would be thus saved, costing, if made of posts and boards, about $1.50 per rod, amounting to $480. The annual interest on this is $33. The annual cost of replacing, if lasting 20 years, would be $28, or $61 saved annually in fences. Secondly, the increase in manure would be about as follows:—A well managed farm of this size should yield every year about 200 loads of manure. If doubled by soiling, it would yield about 400 loads. But this would not be a clear gain, as the ordinary droppings on pastures are valuable; probably it would be safe to put the gain at 100 loads, worth, at $1 a load, $100. Thirdly, the increased growth of forage, when not trodden down by hoofs, and the free use of cornstalks and sorghum for feeding through summer, would doubtless double the feeding products of the soil. If 20 acres were in pasture therefore, worth ordinarily $5 per acre, a doubling of this would amount to $100 more. These three items would amount to $261, and would much more than pay the wages of a hired man to cut and draw the 20 acres of forage and take care of the animals in summer—even with the disadvantage of cutting by hand, instead of the appliances of mowers and other machinery used in cutting wholesale in haying time. Probably this estimate may be considerably varied on examination.

Doubtless the best way of treating the 15 acres mentioned is, if possible, to spread a coat of manure on the grass in autumn or winter, and invert the sod the following spring, and plant corn upon it. Follow this with oats or barley and wheat. If oats before wheat, a second coating of manure should be applied. If the weeds are well eradicated, by this time it may be heavily seeded to grass, which will doubtless yield abundantly. The depth of the proposed plowing should vary with circumstances. If the subsoil is sterile, the depth should be moderate; and if a Shares harrow be used on the inverted sod, it will bring the soil into more complete tilth. If the soil is deep, or the subsoil good, it may be advisable for the purpose of destroying the weeds, to turn the whole under about one foot by means of a large double Michigan plow drawn by a heavy team.

It will usually pay to draw muck a mile and a half, (for littering barnyards, forming composts, &c.,) especially if it has been pretty well dried by draining or throwing out in heaps and covering. Wet muck is more than three-quarters water, and it is unprofitable to draw more than three or four loads of water in order to get one load of muck. It is still more impor.

tant to have the muck dry when it is to serve as an absorbent, for it will not take up any liquid manure when already saturated with water.

Sawdust is only valuable as an absorbent of liquid manure, and for this purpose should be very dry—wet sawdust is nearly useless.

INDIAN CORN AS A FODDER PLANT.

Value of Cornstalks and how to Use them.

At an early period in my career of farming I embraced the English idea that turnips or other root crops were essential to successful farming, because it enabled one to feed a larger stock of animals from a given surface than could otherwise be done, and thereby greatly increased the manurial resources of the farm. I soon found, however, that the conditions of climate so essential to the profitable cultivation of roots, and of turnips in particular, were wanting in a large degree in this country. That instead of the humid atmosphere of England, we had hot dry seasons, which rendered the profitable cultivation of that bulb exceedingly precarious, so much so that with our very hard, cold winters, and the increased amount of room required for storage, no farmer could afford to grow them.

My attention was next directed to Indian corn as a substitute, and I early came to the conclusion that I could make more beef, mutton or pork, from an acre of corn, both stalks and grain, than I could from the same surface in roots. It was not, however, until I adopted the plan of cutting or chaffing the stalks that I began to realize the full value of the plant to the farmer. I have now had several years' experience with chaffed stalks, each year improving upon the experience of the last, and begin to think that I pretty well understand the subject of making the most of coarse forage for winter supply.

But heretofore I have, with a very slight exception, confined myself to the stalks of the cornfield after the grain has been secured, observing the results of others' operations who have sown or drilled in corn exclusively for fodder. I took a hint from a milkman who lived near Buffalo and supplied milk to that city. He was in the habit of sowing several acres with western corn broadcast, cutting it up before the frost, and curing in large stooks well set up and fastened at the top with strong bands, and only drawn in when wanted in the winter. The stalks were cut and hot still slops poured upon them, and then fed. He wintered his cows in this manner, and always had a good flow of milk, and his cows kept in high condition. I became satisfied that to make the stalks of increased value to the cattle, some method must be devised to moisten the stalks before feeding, as by that means mastication would be considerably facilitated, and thus their value for feed would be enhanced. Acting upon the ideas thus suggested, and having some 25 acres of corn-fodder, and considerable straw, and only a small quantity of hay—rather a large stock of animals, some 40 head of cattle and seven horses—I prepared vats in the basement of one of my barns, into which the cut feed falls from the cutter. I found that the cattle averaged about 3 bushels of feed per day; the vats therefore held enough for 24 hours' feeding, and an extra feed, or four feeds. When we begin to feed from one vat the other is filled by wetting down every few baskets full of dry feed, and forking it to the opposite end. Before commencing to wet down, a barrel is filled with water, and salt added to make it slightly brackish, and something more than a barrel of water is used upon the vat of cut feed, and entirely absorbed. In a few hours fermentation commences, and before we begin feeding from the vat the feed has become *smoking* hot. Thus far the cattle eat it with great avidity, and seem to thrive; at any rate the cows which are in milk do not decrease the daily flow. The stalks are cut with about one-third their bulk of bright wheat straw, cut when the wheat was well out of the milk, but the berry not hard. I use a power cutter, which is capable of making about 3,000 bushels of cut feed in three hours, the time we usually spend at the work. We usually keep about two days' supply of stalks, uncut, or enough for 6,000 bushels, on hand in the barn, in case of bad weather, but otherwise draw from the field as wanted, having found that the best way of keeping stalks. The straw is not saved under cover. The length of cut is about three-quarters of an inch. I think for sheep I should cut not to exceed half an inch. A few of the coarsest butts are left by the cattle, and a still smaller number by the horses. The waste is not as much as with good timothy or clover hay. In my practice the fodder from an acre of corn is worth all that it costs to make the crop.

This leads to the question how much winter forage can be grown upon an acre by means of cornstalks? I have not yet made any experiments upon this subject which might be considered as conclusive, except in fall feeding from the grown stalks. The product of a square yard of green stalks from western corn, either sown broadcast or in drills, will considerably more than furnish food for a horse for 24 hours. I usually commence feeding when the green stalks are about 4 feet high. I am satisfied however that the stalks grown upon a square yard will furnish fodder for a cow or ox for 24 hours, and all that they can possibly eat.

There are about 200 days foddering for our animals. An acre contains 4,480 square yards, or will contain, if fairly cultivated, the necessary fodder for twenty-two animals the usual number of days. If the corn be drilled in early, and not too thick, say at the rate of 2½ bushels to the acre, there will be small ears enough perfected to supply all the grain necessary to keep those animals in good store condition. But as I may err, and it is better to do so on the safe side, let us double the quantity, say two square yards—and any person who will measure off 3 feet by 6 feet will readily concede that it is no very large yield to say 3 bushels of chopped stalks will be produced from that space. We then have food for eleven head.

It must be understood that it is only by feeding cut feed that I claim such results can be achieved.

I would like to have this subject pretty thoroughly *ventilated* this winter, for I think it a very important one. P. *Darien, N. Y.*

The enormous piggery at Portesham, in Dorset, now contains a herd of swine nearly 4,000 in number. The animals are chiefly fed on wheat and maize. Pig meat is 2s. a score dearer than it was at this time last year, owing to the scarcity of butchers' meat in general.

BONE MANURE.

I was much interested in the article reciting experiments with bone dust, by Thos. J. Edge, published in the Co. GENT., of Dec. 1st, and copied from the Germantown Telegraph. It strikes me, however, that there is one important matter wanting to render these experiments valuable; and that is, the want of a comparison of the amount of produce on boned land with those on land not so treated. I know the farm on which these experiments were made. It is in a very good state of cultivation, and will produce excellent crops with ordinary farming, but its occupant is an intelligent and enterprising young farmer, who proposes to bring his land up to its fullest capacity in production. Some others of us have also been experimenting with bone to some extent for a number of years, and each year but adds to our confidence in its efficacy as a manure. Our land has been long farmed, and as a rule much of the grain produced has been sold off the premises, and although in many instances lime is regularly applied, yet the yield of our crops is often very unsatisfactory, and especially is this the case with grass. Farmers, or some of them, complain that timothy does not take well with them, and discussions are had as to the best manner of sowing the seed, whether by the drill, before the drill, or after the drill, in the fall or in the spring. But when we apply a dressing of pure home-made bone phosphate, we find it does not matter how it is sown; it grows equally well sown any of those ways. Our land was too poor to grow timothy.

Another fact is also beginning to be apparent, and that is, we must not follow the homoepathic practice in the application of bone, for however successful it may be in treating the maladies of the human subject, it is not good when applied to the ills of soil. We used to dribble on two or three hundred pounds per acre. and although the effects were good, it was not sufficient to encourage much outlay for bone and acid. Subsequently the dose was increased, and, so far, the profit has been proportional to the expense. How far this proportion will be maintained it is hard to tell; but I have applied this fall one-half ton to the acre on my wheat, in full confidence that I shall be richly paid for the outlay; I expect a good crop of wheat and heavy grass after it, and if a farmer can have good crops of grass, he can have everything else. I know one instance near by, where, some eight or ten years ago, a half ton of pure home-made bone phosphate mixed with a portion of guano, was applied to the acre, on a very poor, stony, clay soil, on which nothing would grow, and the result was a heavy crop of wheat, and heavy crops of grass succeeding it, and the field is now covered with a very closely set, compact sod that affords every year an abundance of pasture. Such an application with accompaning judicious treatment, constitutes a permanent improvement. I prefer the phosphate to the raw bone on account of its more immediate action; and I prefer making it to buying ready made, because, aside from the certainty of getting a pure article when made at home, it is important in order to secure its best effects, that it be applied before fermentation sets in, which is very destructive to the organic matter which the mixture contains. L. *Jenneville, Pa.*

Effects of Top-Dressing with Muck.

Two years ago this past fall, I had a small piece of ground (one-third of an acre,) in grass. It was run out and needed plowing up. I dreaded to put the plow into it, as I was sure of a large crop of cobble stones every time I done so. I finally concluded to try the effect of top-dressing, and accordingly put on, the last of November, sixteen loads (twenty bushels each,) of muck on which two pigs had run two months. It lay so thick on the ground it made it look like a plowed field. My neighbors said I would have to plow it in. In the spring, as soon as the snow was off, I went over it with a rake, breaking up all lumps not dissolved by the snow. The grass soon came up—at least ten days before any other near it. In June it was so stout and lodged I had to cut it. In August I cut it again, getting a heavier and better crop than the first—putting the two crops together, I cut at the rate of five tons per acre of good well cured hay—and could have cut a good growth of rouen later in the season. This year, from the same piece of ground, two good crops of grass have been cut—though it suffered badly from the drouth—and a fine growth of rouen was left on the ground. From this one small experiment, I am convinced that top-dressing late in the fall will pay, and that muck compost is the best manure to do it with. R. *Pepperell, Mass.*

Preserving Butter while Using from Firkins.

A writer in the *New-York Observer* furnishes and commends the following mode, given in Mrs. Cornelius' "Young Housekeeper's Friend." After taking out butter enough to last a week or more, lay a piece of white linen over the firkin, covering it closely around the edges, and then pour on a solution made of two quarts of water, one quart of fine salt, one pound of sugar, and a teaspoonful of saltpetre. Head up the firkin, and if it leaks set it in a wash-tub and put in some more, driving down the hoops; every time butter is taken out, close the firkin in this way. If the salt does not all dissolve in the brine, add a little more water. One recipe will do for 100 pounds of butter. The above correspondent adds—"With this recipe I have kept butter into July, in Brooklyn."

On showing this method to an experienced and skillful housekeeper, she said it was precisely the same that she had been familiar with for more than thirty years as an excellent receipt. Since the high price of sugar, however, she had used only the salt and water, and found it to answer nearly as well.

COUNTRY GENTLEMAN INK.

You will oblige me by republishing your receipt for *black ink*, giving the ingredients *by weight*. It is excellent. SELVA.

Dissolve eight grains bi-chromate of potash, and half an ounce of pure extract of logwood, in one quart of very clean rain-water. The vessels must be perfectly clean, or the ink will be dull or dirty color. Shake the solution occasionally, and leave the bottle *uncorked*. In a day or two the ink will be of an intense black. If mixed with even a small quantity of common ink it will be spoiled. This ink often fails from impurity of materials, or using dirty water or dirty vessels, or pens used in other ink.

Events are constantly taking place, and politicians are constantly desirous of doing the same thing.

Classification of Fine Wooled Sheep.

The established importance of the Wool-producing interest in this country—especially at the present time—renders it an object of the highest regard with our Agricultural Societies to do what they can to promote that interest in the most effective and judicious way. In the effort to accomplish this, we are met at the outset with differences of opinion as to the proper classification of Fine-Wooled Sheep, at our exhibitions. They all go back to a Spanish origin; and, whatever may be the claims of this or that particular flock to purity of descent from any one Spanish source, the subject is, to say the very least, surrounded with such obscurity as to make a dividing line, upon the basis of descent, apparently quite impracticable. It is much as though our breeds of Long-Wooled English sheep had been more or less confused and intermingled from time to time, all the way down for forty or fifty years,—Leicester and Cotswold and Lincoln, until—while one breeder was disposed to adhere to one name and another to the second or the third,—to the great body of intelligent observers no distinct marks were perceptible on which the classification could be properly based. Differences of form, of wool, of proportion between weight of carcas and weight of wool—could undoubtedly be seen, but these differences would often be found occurring in sheep of the same flock; and the result would be, as was the case under the division of Fine-Wooled sheep formerly adopted in the prize lists of our State Society, that the same flock might compete in all the three classes at the same or succeeding Shows.

The above remarks as applying on the one hand to what have been classified as French, Saxon and Spanish Merinos, respectively, or on the other, to what in the light of very recent investigation it is now fashionable with some to style the Paular, Infantado, and Infantado-Negretti, (or Silesian,) must not be taken too literally; since undoubtedly there is a nearer approach to entire purity of breeding and to uniformity of standard, in some of our American flocks than in others, and, as to the Silesians, they are comparatively of so recent introduction that we know they are now to be found of unmixed blood. We understood Dr. RANDALL at the Rochester State Fair, to advocate distinctly the separation of Merinos under the three last named divisions. But, regarding the chief end of the Merino to be as a producer of the most and the finest wool, our State Society, had merged them all in one class several years ago,—desiring to award its prizes to, and encourage the breeding of, that kind of Merino nearest perfection in this respect, by whatever name it should be styled. This position has one weak point: as already stated, and we believe universally admitted, there are differences, perhaps arising from the very fact of their mixed origin, as regards both carcas and fleece, between individual Merinos, and with a committee biassed altogether in favor either of an exceedingly fine fleece for example, or of an exceedingly small carcas in proportion to weight of fleece,—prizes would hinge rather upon these personal preferences than upon any well-established standard of merit.

It may be presumed, we think, that Dr. RANDALL failed to show that a classification as "Paular," "Infantado," and "Infantado-Negretti," (if we are right in supposing that to have been his proposition) would meet this difficulty. If we apprehended the course of the discussion at Rochester, this was exactly the point on which Mr. PETERS and Mr. GEDDES were eager to obtain farther light, if the time of adjournment had not intervened. We argue Dr. RANDALL'S non-success in the establishment of the above classification, partly indeed from the manner in which that discussion terminated, but mainly from the fact that in a subsequent number of the Rural New-Yorker (as quoted in the COUNTRY GENTLEMAN of Dec. 22d, page 401,) the Doctor himself advises a wholly different course—namely, the recognition of one class of "Merinos, bearing wool adapted to the manufacture of broadcloths and other finer fabrics," and of a second class, including all other Merinos, to which he would add the word "American," as the distinguishing title. Although, as he suggests, in order of publication, the latter might have the first place of the two,—the question of its being a practicable division, arises not only from the difficulty of establishing a line of distinction which shall be invariable, even by the most competent of judges, varying, as they do, from year to year,—but also because *fineness of wool* is in itself generally regarded as a point of superiority, and careful breeders might dislike exceedingly to see their sheep thrown out by a committee from the "Broadcloth Merinos" and put among the heterogeneous lots of coarser-grade "Americans," and, still more, voluntarily to enter them with the latter.

In other words, this proposed division appears to leave us just about where we stand at present. For, if its object is in point of fact to rule out the Silesians as a "broadcloth" class, from competition with other Merinos, we can reach this end in a much simpler way—in a way open to no strife or misunderstanding—by erecting a class under that name. This is not what the breeders of Silesian sheep want, because they desire an opportunity of establishing the claims of that family in direct competition with others, and do not admit the justice of ruling them out on the score of what they consider only one among several features of superiority. Other breeders, we can hardly think, would like Dr. RANDALL'S division, as, say what we will, the idea conveyed by it is one of comparative inferiority in the aggregated many, and of comparative superiority in the select few. Could any efforts at softening the distinction prevent its being eventually regarded as implying "First Grade Merinos" and "Second Grade Merinos" respectively? If, moreover, others than the Silesians are to come into the "Broadcloth class," the difficulties of judging would only be doubled by the preliminary labor of classification; *before* separation into the two classes, *all the Merinos would be in a single class just as they now are;* and in effect, there would be two sets of prizes to award in this single class,—one for fineness of wool, and the other for other points of merit not yet distinctly specified, except by the name "American."

It was the object of this article, not to enhance the difficulties that meet us, but to contribute if possible, to remove them. We confess, desirable as some other classification may be, that none has as yet been suggested which seems to us either practicable, or, as a

whole, any actual improvement on our present prize list. We have not a prize list of the Vermont State Agricultural Society at hand, but are informed that all Merinos there compete in a single class, which, if true, may be taken as the example of those most nearly and deeply concerned in the subject.

It has not been the custom of the Executive Committee of our Society, however, to adhere rigidly to the theories or consult only the opinions of one another. They have considered uniformly that they might accomplish the most good in each department of their Exhibitions, by advising with those immediately concerned, and who might reasonably be supposed to have given the most attention to any mooted point. If, upon a full review of the present question, in its various lights, it should seem expedient to sub-divide the Merino class, as it now stands, there is one example in that direction to which no allusion has been made in the discussion of the subject thus far. We allude to the International Exhibition at Hamburg in 1863, an official copy of the Premium Awards at which we have but lately been able to obtain. There were on that occasion *Four Classes* open to competition, the titles of which may be translated as below:

MERINOS.

1. Bred with especial reference to extreme Fineness of Wool.
2. Bred with especial reference to great Weight of Wool.
3. Bred with especial reference to Form of body and Light Keeping.
4. Bred with a view to combine Fineness of Wool, Quantity of Wool, and Weight of Body.

If these four classes were introduced and maintained by the Agricultural Societies of the country generally, and if breeders were led thereby to breed up to some definite standard, and secure greater uniformity in their flocks for either one of the purposes named, doubtless much good might be accomplished, and Four Families of "American Merinos" produced, in which all the previous nomenclature of the breed, whether Paular or Infantado, Saxon, French or Spanish, would be deprived of its past or present influence in misleading the public—and from which flockmasters in different States and climates could select advisedly such sheep as would best suit the peculiarities of their location, and the purposes held in view. And while there continue to be no well defined distinctions between our leading flocks in these four directions, entitling them *to rank as separate breeds or classes*, we submit whether, continuing the Merinos *as a single class and breed*, we may not approach a solution of the problem by offering to the competition of all that are exhibited, some such series of prizes as the following, —of course duplicating the list here given for each of the different ages, and for the two sexes:

For the best Ram, 2 yrs or over, as regards fineness of wool,	$10
2d best do. do. do. do. do.	8
For the best Ram, 2 yrs or over, as regards quantity of wool,	10
2d best do. do. do. do. do.	8
For the best Ram, 2 yrs or over, as regards size and symmetry of carcass,	10
2d best Ram, 2 years or over, as regards size and symmetry of carcass,	8
For the best Ram, 2 years or over, combining quality and quantity of wool, with well developed carcass,	10
2d best Ram, 2 years or over, combining quality and quantity of wool, with well developed carcass,	8

It would be quite possible, but perhaps not probable, that more than one of these prizes should go to the same animal—in which case he would have double evidence of merit, and the breeder able to reach this end would of course deserve the additional recognition of his success.

Amount of Pork from a Bushel of Corn.

Our readers may have observed the published statement of the experiments of J. B. LAWES, who obtained 100 pounds of pork from seven bushels of corn or one pound of pork from 4½ pounds of corn. The grain was ground and moistened with water before feeding. This is regarded as successful management. At the present time, when pork sells for 15 cents per pound, the corn thus converted to meat will bring a little over $2 per bushel, or at the former rate of five cents per pound, the corn would be worth 71 cents per bushel for fattening pork. This estimate is based upon the supposition that the manure pays for the grinding and feeding.

The experiments of NATHAN G. MORGAN of Union Springs, published in the ANNUAL REGISTER for 1864, present much more favorable results. As a mistake occurred in one part of that published statement, we here repeat his mode and its results in a corrected form. He always commences fattening in spring, at which time a bushel of corn is more valuable in its results than in autumn, and continues a regular course of feeding throughout the season. The corn is ground, and ninety pounds of hot water poured on every sixteen pounds of meal, and after standing 12 to 18 hours, the whole mass becomes thick feed. He finds by measured experiment that the value of the corn is fully doubled by this process, as compared with corn fed in the ear, and fifty per cent. better than meal merely mixed with cold water. One bushel of corn thus prepared, after deducting ten per cent toll for grinding, and leaving only fifty-four pounds for the bushel, will give 20 pounds of pork—or at the rate of 2⅞ pounds of corn for each pound of pork. When pork is five cents per pound he obtains at the rate of $1 dollar per bushel for his corn, or at the present time, when it is fifteen cents, the corn will yield $3 per bushel.

A coincidence will be observed between these experiments and those of Lawes as above stated. While Morgan obtains by scalding the meal, one pound of pork from 2⅞ pounds of corn—he gets fifty per cent. less, or at the rate of one pound of pork to 3¾ pounds of meal, when mixed merely with cold water, which is within less than half a pound of the quantity of meal required in Lawes' experiments, when the same kind of feed was used.

Breeds and management will of course vary the results; in the many trials made by N. G. Morgan, he had every advantage of good sound corn, comfortable quarters, cleanliness, regularity of feeding, and quality of breed. It may be well to state that he has found the best sound corn double the value of a great deal that is used when badly grown or imperfectly ripened, or more or less mouldy.

RABBITS GNAWING TREES.

Let me repeat it, for my neighbor says several of his fine young apple trees have been ruined lately by the rabbits gnawing them:—Take thick *lime whitewash* and thin it with strong *tobacco juice*. A bucket full will serve 200 trees, and a man can make it and put it on in half a day. It is effectual, for I have tried it. SUEL FOSTER. *Muscatine, Iowa.*

Make provision for want in time of plenty.

Winter Evenings for Farmers' Boys.

Every farmer, whether his business be on a limited or an extensive scale, should labor some with his own hands. He should know practically how to perform all the different farm operations with skill, that he may instruct his men and take the lead in cases of emergency. By doing so he will avoid that feeling of dependance and helplessness which will occasionally come over every one who depends entirely on his hired men. If his farm is small, he may, if he chooses, spend most of his time in personal labor; but if it is extensive, his frequent examination of every part, and proper supervision of its labors, will render much work from his own hands unadvisable and even unprofitable. But our object at present is to speak more particularly of farmers' sons. While they should learn to do all kinds of work, they should not be worn down by it. The development of the mind as well as of the body, is worth far more to them than large and hard-earned estates. They should not, on ordinary occasions, have to labor so severely as to unfit them, during the season of short days, for evening improvement. There is no greater benefit which a parent can confer upon his son, in order to fit him for success in life, than to give him a taste for intellectual cultivation. Every association should therefore be thrown around him, and every attraction offered to induce mental culture and refinement. The farmer, therefore, who cannot afford separate rooms in his dwelling for a parlor to receive company, and a study or library for his sons, should give up the former for the sake of the latter. A good study-room should at least be secured, whatever else may require to be sacrificed; and this should be made attractive in an intellectual, literary and scientific point of view, so far as may be practicable. Young men and boys will then be less disposed to stroll about during the long evenings of winter, or spend their time in idle talk and bar-rooms, stores and other places where the idle and uncultivated assemble, and where they often acquire the first lessons in smoking, drinking and gaming.

Among the various occupations for evenings, may be mentioned the following: Drawing designs of houses, barns and other farm buildings, and planning their internal arrangement; sketching objects in natural history, writing essays on rural subjects; consulting and comparing the views of authors; and especially important, the practice of keeping a regular register of passing events. This register may be kept in a single blank book, embracing observations on the crops and the result of management, on the weather, including notices of the winds, clouds, storms, meteors, &c., on the appearances of birds, the advance of vegetation, and on various occurrences, either of an immediate personal nature, or from more widely extended observation. It may be deemed best to procure different blank books for different departments, as, for example, one on natural history, another on agriculture, and a third on the occurrences of the day. Parents should encourage their children to keep such records, as the practice not only improves them in writing, thinking, acquiring information and arranging their thoughts, but such records may be referred to in after years, and will be found interesting as well as valuable in many ways. In order to encourage young people in this practice as well as to perform it in a neat and finished manner, handsome and suitable blank-books may be given to them, as appropriate Christmas, New Years or birth-day presents; or neat writing desks, or portfolios, furnished in the same way.

The many excellent designs which we receive for publication in this journal, of various rural contrivances and structures, possessing much merit in themselves, but drawn in an imperfect and bungling manner, show the great and prevailing want of instruction in drawing, or encouragement of its successful study. Every facility should, therefore, be afforded for improvement in this art—pencils, and the best instruments for drawing plans and designs should not only be furnished, but the importance of executing the work in the neatest and most accurate manner shown to the young artist. We once knew a boy who, without any instruction or guide, selected the most finished and finest steel portrait within his reach as a lesson to copy—and determined to execute the work well. He spent nearly an entire week on one eye and the nose with great success, for the closest scrutiny could scarcely have discovered any inferiority to the original. Although such extreme care may not be advisable in ordinary cases, yet it is incomparably better than the more frequent hasty, careless, inaccurate, distorted and coarse productions so frequently seen.

An interesting winter employment may be afforded to young farmers, by comparing and digesting the many items of interest comprised in a farm diary kept during the preceding season. The results of various practices may be observed and compared, and valuable information thus derived in relation to the most profitable points in management. A memorandum book may be made from these examinations for the labors of every week during the coming year, which may include many suggestions for future observation and experiment. All these will not only enable the young farmer to reach a degree of perfection and profit which those who depend only on their memory cannot attain, but the practice will lead to order and system, and prevent the omission of many essential operatious in farm management.

There is no class of scientific studies, connected with rural pursuits, more interesting and appropriate than those of the different branches of natural history, such as botany, mineralogy, geology, entomology, &c. The library and reading-room, which every farmer who has children should provide for them, will be all the more interesting for the collection of minerals, the specimens of dried plants, or the cases of insects which it may contain. Skillful young men and boys will construct these cases with their own hands. A farmer's son, whose herbarium contained fourteen hundred species of plants, not possessing much pecuniary means, purchased the paper and bound with his own hands the nine neat and thick folio volumes which contain the specimens. This may not be usually necessary, but the more that young people learn to manufacture and help themselves, they will not only become more skillful and less dependent on others, but will acquire an interest which merely purchased objects will not give them.

Be content with what you have.

FEEDING SHEEP IN WINTER.

MESSRS. EDITORS—We often hear the question asked, when is the best time to feed grain to sheep? I have no new theory to advance, but as far as my limited experience goes I am satisfied that the grain should be fed the first thing in the morning, and my reasons are as follows: The most important is, they get it regularly at same hour every day; whereas, if fed at noon they generally get it any where from eleven to one o'clock, and with about the same irregularity if fed at night. Most farmers, especially in New-Hampshire, have business in the woods at this time, and it is not always convenient for them to be at home precisely at noon, or just such an hour at night; consequently the feeding must necessarily be more or less irregular.

I believe every observing flock-master will agree with me, that sheep generally have the poorest appetites in the morning. Now I find that a gill of grain to a sheep will sharpen their appetites, and that they will eat poor hay or straw, or whatever is put into their racks, much better after grain than before it—in this respect they are like children, they want the pie first.

Another reason is, their racks are in a better condition to clean out in the morning, and you are not annoyed with a continual bleating and blowing every time you go to the barn, which is apt to be the case if fed at any other time of day.

If sheep cannot have grain through the whole fod dering season, it should be dispensed with in the middle. I usually commence to feed grain when I begin to put the buck, which is about the 1st day of Nov., and follow it about ten weeks, and then if the hay was well secured and cut early, I dispense with the grain about eight weeks; this brings me into March. I then commence the grain again, and follow it up till pasturing time, and then gradually take it away. In the above I have reference to my breeding ewes. I believe the grain at the first part tends greatly toward the development of the fœtus. I believe in giving the germ a good start, whether it be in animal or plant; and I know that the grain at the last part causes a better flow of milk; consequently a good fat lamb.

I find many farmers in this section think they cannot afford to feed grain at the present high prices. They think corn at $2 a bushel rather too "heating," but are not aware of the fact that poor swamp hay and brakes are a little too "freezing," and if they are lucky enough to raise up half their lambs, and not lose more than half their sheep, they think it is "bad luck," as they term it, or lay it to the "hard winter for sheep."

The present high price of wool will induce many farmers in this section to keep more sheep than they can get through without considerable stinting. Many have allowed their sheep to run till nearly the present time without any extra feed except a little poor hay; consequently such sheep will come to the barn in a poor condition, and many will grow poorer till their pelts are hung over the beams. This was the case last year with thousands, but still a few farmers are not satisfied with the experiment, but are trying it over again, and think they are great economists, and tell us with great gusto, that "their lambs get nothing but meadow hay and brakes, and plaguey poor at that."

But, Messrs. Editors, we have men here that are satisfied that good keeping pays, and feed their grain freely, and get a good price for it. They know if a sheep is worth keeping at all, it is worth keeping well; if not, the quicker its pelt goes over the beam the better. S. C. PATTEE. *Warner, N. H.*

THE CASHMERE GOAT.

EDS. COUNTRY GENT.—Enclosed I send you circular of Mr. S. S. Williams, Granville, Ohio, giving almost the whole of the information existing in this country concerning the Cashmere goat. I have noticed several items in your paper on this subject from persons illy posted, and thought this circular would be a valuable memorandum for your occasional use.

Personally I would also add, that I have seen the flock of Dr. Davis on his plantation on the Saluda, S. C., also his cattle from India, (mentioned in papers under various names.) Of these latter, I can say decidedly, they are fit for only a "menagerie." Neither for work, milk, nor fattening qualities, will they bear comparison with the Texan cattle. They lie all day submerged in mud—at night roam over and through the best of fences, as fleet as horses, and naturally wild.

On the subject of the Goat, I wish to add my testimony wholly and flatly against the fleece of this goat ever becoming a valuable staple.

The Cashmere shawl of commerce is from *the fur of the infant kid*, each animal furnishing an ounce or two, and dying under the process of deundation. This fur is a mouse color, and retains colors richer and more beautiful than any known substance. But to us in America, is not soon to be of value.

The fleece of hair, is only hair—lacking the felting quality almost wholly. Dr. Sims, who succeeded to Davis' flock at his death, took the goat wool to various manufactories for carding and spinning. They could not succeed. Finally a Mrs. Morris, near Hendersonville, N. C., succeeded in carding some by hand, and thus Dr. Sims got a pair of coarse, hairy, harsh pan taloons, very durable no doubt. He exhibited them at various State Fairs without producing any favorable response, except for his own industry.

This goat is really a great acquisition to our Northern farmers in a different way from any yet suggested, and for the general benefit I will here mention it in as few words as I can.

Kid meat is equal to the best venison, if killed at eight or ten months old! The common goat at ten months dresses about 50 pounds, and the Cashmere, 100 pounds. The Cashmere is a beautiful animal, and an ornament to any man's grounds, *and is not breachy.* A farmer can have a flock of 15 to 30 without any trouble or appreciable cost of "keep." The farmer in summer gets no fresh meat except from his poultry, from circumstances well known to farmers, and therefore not necessary here to mention.

From his beautiful little flock of goats he can kill eight to sixteen kids each summer, making, say 80 pounds each of better meat than he ever tasted of before. This practice, in vogue all over the cotton country, ought to be adopted by our farmers at once; we have every species of pasturage and fodder, cheaper and more abundant than they ever had. In this view I am a Cashmere man, but in counting upon its "clip" I wish none to be disappointed.

Fort Wayne, Ind., Dec. 15, 1864. J. R. STRAUGHAN.

Phosphoric Acid for Turnips and How to get it.

MESSRS. EDITORS—The method of preparing the bone manure for my turnip crop, alluded to by Mr. Bartlett in the COUNTRY GENTLEMAN for Oct. 13th, page 284, and which I told him I would furnish you for publication in the CO. GENT. is as follows:—In the first place I expel all the animal matter from the bones by burning them, so they can be easily reduced to powder by grinding. In order to burn them with as little waste of the mineral part of them as possible, I build up a cheap kind of a furnace, in the open air, with any brick at hand, old or new. I make the furnace of a suitable size for the quantity of bones to be burned. One of a circular form, two and a half feet in diameter, and about three feet high, will be large enough to burn two or three bushels. I do not use any mortar in making the furnace, but merely lay the brick together in the same way a well is bricked up. In building it, when it is eight or ten inches high, I lay bars of old iron across it to make a grate for the bones to lay on so as to keep them up from the wood placed below them. A hole eight or ten inches square must also be left in one side of the furnace below the grate to put wood in under the bones to set them to burning. The bars of iron need not be very close together, only near enough to hold the larger bones, which are laid in first and then the small ones above them. If the bones are not disturbed while burning, and they need not be, very few of them will crumble to pieces so as to fall through the grating into the wood ashes below. After the bones are put in at the top of the furnace, put some dry kindling wood in under them and set it on fire; the bones will soon get heated so as to take fire and burn themselves; therefore it will not take much wood to burn them. When they get well to burning they make a very hot fire and a vast quantity of smoke, which is not of a very agreeable odor, for which reason it is best to have the furnace some distance from the dwelling-house. After the bones get well to burning they can be left without farther care; in about two hours they will have burned to whiteness. When they have cooled down so as to be handled, I take them out, break up the large ones with an old ax, small enough to be ground in a plaster mill. If there is no plaster mill in the vicinity they can be ground at any mill where corn is ground on the cob, and in the same way. If some of the bone ash gets left in the mill and so gets into the next grist of grain it will not do the animals that eat it any harm, but may do them some good, especially if they are troubled with the bone sickness. I have the bone ash ground as fine as possible, and it can be ground as fine as flour. The finer it is ground the less time it takes to decompose it with acid.

About the first of last June I had some land prepared ready for sowing sweet French turnips and ruta baga, but the ground was very dry and I waited for rain. July arrived, still no rain; it would soon be too late for sowing ruta baga. We were then having the most severe drought ever known in the State. The surface of the ground was as dry as ashes for some inches in depth. The question was, how I could sow the seed with any hope of its vegetating. I had a quantity of the above described finely ground bone ash which I could have converted into superphosphate of lime by the method I have described, published in the CO. GENT. for May 19th, page 314, but I thought there might be a better method for a dry time, and besides, I had long been of the opinion that the fertilizing effects of the so-called superphosphate of lime depended wholly upon the soluable phosphoric acid which it contained. If that was the case, then why not decompose the bone ash in the same way it is done in the process of making phosphorous. This process would certainly decompose all the bone ash and set the phosphoric acid free if it could be done, and being in a liquid state, it could be applied in the drill with the seed, and might afford sufficient moisture to make it vegetate. I was also influenced to try this method because a similar method is highly recommended in Morton's Cyclopedia of Agriculture. I made up my mind to try it.

Into a half hogshead I put 15 gallons of water; to this I added 16 lbs. of sulphuric acid, and then stirred in 24 lbs. of the bone ash, and let it stand, with occasional stirring, twenty-four hours. The ash was almost immediately decomposed into sulphate of lime and phosphoric acid. The sulphate of lime settled to the bottom in an almost impalpable powder, leaving the phosphoric acid held in solution by the water, which was too intensely sour to be applied with the seed in the drill without being very much diluted. I therefore, when ready to sow the seed, after stirring the mixture well, took out one gallon, added to it four gallons of water and distributed it in the drill with the seed at the rate of about one gallon to six rods of drill. I left a few alternate drills without the liquid.

There was a little rain fell a day or two after sowing the seed, enough to wet the ground perhaps half an inch, but bright hot weather followed immediately after, so it could not have done much good, but it probably helped start the seed, for it all came up well in less than a week. The rows that had the liquid applied came up before the others and grew much the fastest. The seed was sowed the 9th day of July; two weeks after, or on the 23d day of July, notwithstanding there had been no rain except the above mentioned, the plants which had the liquid had rough leaves an inch across, while those without it were just beginning to show the rough leaf. Mr. Bartlett saw the turnips the 28th day of September, and has stated how they appeared then; when I harvested them there was as much difference as when he saw them; those that did not have the liquid were hardly worth harvesting, while those that did have it were from three to six inches in diameter, and were the handsomest and best turnips I have ever raised, the sweet French turnip being about as much better than other turnips as the Hubbard squash is better than other squashes.

There was no other manure put upon the ground this year but this decomposed bone. Last year, there was a light dressing of barn-cellar manure spread on and plowed in, and the ground planted with cabbages; the crop was a good one; so there was probably not much manure left in the ground for the turnips this year. The drills in which the turnip seed was planted run north and south; the liquid was distributed along in the drills. When harvesting the turnips I noticed almost every one of them had a strip about an inch wide, or about the width of the drill, on the north and south sides, corresponding with the drills, from where the turnips entered the ground to its tap root, plentifully supplied with fibrous roots, while the east and west sides were almost entirely destitute of them. This I think is conclusive proof that the growth depended almost entirely upon the liquid manure, or most likely upon the *phosphoric acid* contained in the liquid. A. CHANDLER.

Concord, N. H., Dec. 16th.

Agricultural Review of the Past Year.

In reviewing the past year, agriculturally, we think it may fairly be characterized as, on the whole, a year of progress. While marked by the introduction of nothing *new*, in the direction of farm crops, or machinery, or domestic animals, it has borne witness to an increased interest in improvements before rendered generally familiar; and, making due allowance for the distraction arising from the condition of our public affairs, its Shows would compare favorably with the average of previous years,—a considerable number of new associations have been established, the subject of agricultural education has met with increased attention, the collection of agricultural statistics has been more widely canvassed, and the possession of enlarged means has enabled many to meet obligations heretofore incurred, and led them to think more seriously of entering upon a course of better farming hereafter.

In Live Stock, the great excitement with regard to Fine-Wooled Sheep has been sustained, and perhaps somewhat increased upon that of the previous year. The ultimate fruit of this will doubtless be to give greater weight of fleece and finer quality of wool to the common sheep of the West. Meetings of Wool-Growers have been held in several States, and societies organized; and if those who are convinced that the production of this staple is the best object to which their land can be devoted, will adhere to that conviction in spite of any temporary drawback in the future, with the same spirit and energy now displayed, both our agriculture and our manufactures must be largely benefitted. In other classes of improved animals, there has been a growing demand, particularly throughout the Eastern States, where the Short-Horns seem to be every day more widely diffusing themselves, and South-Downs, Leicesters, Cotswolds and other mutton sheep are meeting with steady though slow and quiet growth in favor. In dairying localities there has been greater inquiry for the means of improvement, and Ayrshire and Jersey cattle are in request. The Devons appear to hold their own, although our breeders had formerly a large demand for them from the South, which, cut off by the war, has probably never been fully made up at home. There were several importations of improved stock into the neighboring British provinces, but nothing of special importance among ourselves.

Agricultural Colleges are in continued operation in in Pennsylvania and Michigan. Organizations have been effected or arrangements begun, in Massachusetts, Connecticut, New-Jersey and Iowa, while in several other States it has been decided to attach departments to existing institutions. In New-York we have had the pleasure of recording a most liberal offer of endowment for a new college from Hon. EZRA CORNELL—the present college having been closed at the beginning of the war from insufficient means, and the "People's College" having not yet qualified under the act entitling it to a share of the public land grant. This endowment, we trust, may be accepted during the present session of the Legislature; in which case 1865 will share with 1864 a memorable place in the records of private munificence for the public good.

As to Crops we do not learn that the culture of sorghum has fully equalled the expectations of those who hoped to see it supplant, in the manufacture of sugar and syrup, the product of the southern cane. It has assumed, however, a well established place among the farm products of Ohio, Indiana and Illinois, and to some extent in Iowa. We have heard less in 1864 than in 1863 about growing cotton in the border States, although there was a limited quantity planted. Flax appears moreover to have received a smaller degree of notice, at least in print, although the culture of it has possibly extended. Tobacco growing has been undertaken in many new regions, and much enlarged where it before had a foothold.

The year was marked by a vast extension of the Factory system of cheese making, which is entitled to rank as one of the leading features in its agricultural history.

In Horticulture the great attention devoted to the Grape was the especial characteristic of 1864. But the demand for orchard trees of all kinds, and for the smaller fruits, must have been very large, and the nurserymen have certainly had no reason to complain of public neglect.

As to Machinery and Implements, as already intimated, manufacturers have been pressed to the utmost to supply their customers. This activity will doubtless continue during the coming season, and intending purchasers should consult the advertisements of makers as soon as they appear, and order early. The autumn of 1864 witnessed the importation of what is probably the most successful of the English Steam Plows—Fowler's patent—but too late to secure its trial here before the closing of the season.

In Rural Literature, 1864 has seen the last of many of the volumes on Agriculture and Horticulture which for ten or twenty years have made up the bulk of the catalogues. Some of them will be missed, but several are soon to be replaced by re-written and enlarged editions. Among the books noticed in these columns during the year, although not all of them published within it, have been Mr. FULLER'S "Grape Culturist," Mr. MITCHELL'S "My Farm of Edgewood," and "Wet Days at Edgewood;" "Ten Acres Enough," and "How to Get a Farm;" Mr. BURR'S "Flowers for the Parlor and Garden;" Lippincott's reprint of "The Illustrated Horse Management;" "The Field and Garden Vegetables of America," and "Cochrane's Farm Book-Keeping." "The Practical Shepherd" from the press of D. D. T. Moore of Rochester, had one or more new editions; our own "Rural Affairs" met with a gratifying sale, and "The Annual Register" fully maintained its popularity.

There are other features of the last year to which we have not room for reference in this brief summary; and, in closing, we may remind our readers that we shall receive with interest whatever, either in manuscript or in print, they may be kind enough to send us, tending to render our columns a more complete repository of current events, and enabling us, when the year shall close, to review its agricultural history as understandingly as possible.

A Good Investment.—A recent advertiser of live stock in the COUNTRY GENTLEMAN writes us that the investment of $1 in advertising made sales of three pairs of animals amounting to $130, to four purchasers, residing in three different States.

KEEPING ROOTS IN WINTER.

A great leading deficiency among farmers throughout the country, is the want of suitable and spacious cellars for storing roots. Many are deterred from raising them so extensively as the highest profit in farming would require, from the difficulty of not knowing what to do with them after they are raised. There are many farms supplied with good out-buildings, which would be better and more durable by placing cellars under them, the only cost of which would be the excavation and walls,—the roof being already supplied. A cellar 25 by 50 feet, and 8 feet deep, would, if full, hold seven or eight thousand bushels, and need not cost over two hundred dollars at the utmost, if the building over it is not included in the estimate. If properly divided into bins, two-thirds of this space might be occupied, affording storage for some five thousand bushels of roots—or of waste apples when there is a surplus, which for want of such convenience for storing are often lost in productive years. Five thousand bushels would be enough to feed sixty animals for five months, or from the first of December to the first of May, giving each animal a peck night and morning, or half a bushel a day. If fed three times a day, this supply would be enough for forty animals. Any feeder of experience will be aware of the great improvement in the animals which this succulent food will effect when given in connection with dry fodder, such as hay, straw, or cornstalks,

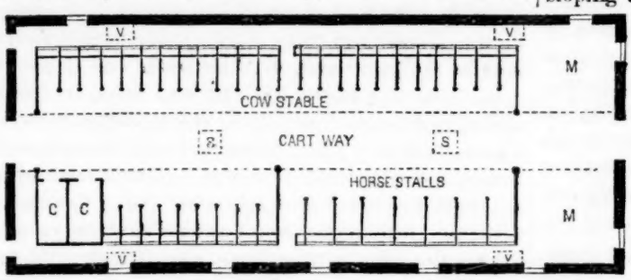


Fig. 1.

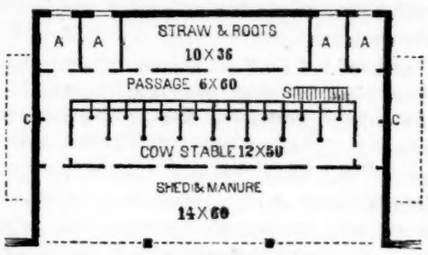


Fig. 2.

during the entire winter months. If animals come out of the winter in the fine condition which judicious feeding would give them, they will remain in good order in the pasture through the season—milch cows affording a more abundant supply, and fattening animals bringing a higher price at less cost.

Our present object is to invite the attention of farmers to the condition of their roots already stored in cellars. Many of these are lost from the careless manner in which they are stored, and the bad condition in which they are kept. They are very commonly thrown in heaps on the bottom of the cellar in contact with moist earth, and with little or no ventilation. The cellar is commonly much too warm for them, and the combination of heat, moisture, and foul air, if it does not rot them, greatly injures their flavor and quality. One of the first things, therefore, which every man should do, is to give his cellars plenty of fresh air. He ought to place a thermometer in it; and, so long as the mercury stands above freezing, he need fear nothing—the cooler the better. When the weather is mild, or not below freezing, there need be no fear of throwing open both windows and doors, and allowing the air to sweep through; and as the thermometer outside descends below freezing, the door may be shut and the windows partially closed, so as not to allow the moisture in them to freeze. Many on trial will be surprised at the amount of air which may be admitted with safety, and the ventilation thus effected by sweeping away the close and impure air will be worth many times more than all the cost of attendance.

This mode of ventilation, however, will be more or less defective, as the fresh air cannot properly reach every part of the masses of roots. To become perfect the interior of cellars must be specially constructed with a view to the passage of air through every part. The passages between the bins for receiving the roots should be in the direction of the prevailing winds, so that by opening a window at each end a free circulation will be effected. The roots in the bin should never rest upon the earth or bottom of the cellar, but should be kept about a foot above it by means of slats. These slats may be most conveniently arranged in the form of trap-doors covering the bottoms of the bins,—so that they may be raised, when the bins are empty, for cleaning out the earth which will fall from the roots through the slats on the bottom below, which would be most easily cleaned if covered with a floor of water lime cement. If the air of the cellar is inclined to be moist, this cement floor will lessen the moisture.

If there is plenty of cellar room, the bottom of the bins may be considerably higher on the rear side, and sloping to the front. A narrow door-way, closed by several pieces in front, will enable the attendant to fill his basket or barrow, placed directly under it, with great facility; and the raised bottom at the rear, will enable him to clear away the fallen earth through another alley provided for this purpose.

These arrangements for preserving cleanliness, dryness, and furnishing a pure cool air throughout the cellar, will prove of great value, and much lessen the aversion which many have to keeping roots on a large scale for stock.

In feeding large quantities of such heavy materials as roots, it will be important to have them placed so that they can be fed with facility to the animals. A smooth cartway for the passage of a hand-cart, should extend from the slicing apartment to the cattle-yard or stalls.

Various modes may be adopted for arranging and combining cattle-stalls with root-cellars, so that both may be easily accessible to the other. If the barn, for instance, should be in the form of a T, one or both the arms may be a root-cellar. If, as is more commonly the case, the form be a parallelogram, the roots may be placed at end end or at the middle of the basement, according to the amount of exterior embankment, for security against freezing. In a cellar like that repre-

sented in the annexed cut, (fig. 1.) if the end at M M runs into the bank, this end might be well appropriated for roots, the space between the two Ms being appropriated to cutting or slicing. If desired, similar spaces may be left at the other end for manure or forming composts; or if straw is largely used for litter, the manure should be placed out of doors. S S show the large square tubes through which straw and fodder are thrown into the alley from above; and V V are ventilators.

Fig. 2 shows a root-cellar at the middle of the basement, kept from freezing by straw above. A A, calf-pens, and C C, cisterns. All such cellars should have side-doors and funnels for dumping the roots from a cart.

DEEP PLOWING.

The readers of the Co. GENT. of Jan. 1863, will remember that I wrote an article on deep plowing, which was then published, promising to give the result of my experiment at some subsequent time.

The land on which I have tried deep or subsoil plowing is a clayey loam, with a very retentive subsoil. I began five years ago by following the large Peekskill plow with Starbuck's subsoil plow in the same furrow. The subsoil plow does not cut more than two thirds as wide as other plows, and merely raises the earth some four inches, and falls back in its original bed, leaving a strip of earth between the furrows undisturbed.

After going over ten acres in this way, I thought I might more effectually stir the whole subsoil strata by cutting both furrows with the same plow. I then gaged my sod plow to cut six inches deep. By having the draft raised and throwing the roller into the furrow I could easily cut the second furrow in the bottom of the first without any alteration of the draft or the roller. This was much more convenient than to change plows every round, as I did when using two plows, as I performed the work with a single team. In performing the work with a single plow I stirred the whole earth the depth I plowed, raising part of the subsoil furrow to the surface, so that at the next plowing the sod and subsoil furrows will be well mixed together.

I have cultivated fifty acres in this way during the last five years. Most of this plowing has been done with Remington's large size steel plow, made at Illion, N. Y. The land I have cultivated, as above stated, is nearly free from stone, and much of it of so adhesive a nature that an iron plow, however bright, would load up the mould-board, while the steel plow would always keep clean, and save 25 per cent. in the draft. Any plow will clean itself in loose gravelly soils. I do not think it necessary to subsoil loose, porous soils, whose tendency is to leach, as they are loose enough without.

I prefer to subsoil in the fall—first, because there is more time for this extra work, and teams are strong; and secondly, because clayey grounds may be quite moist and pasty, and any lumps of clay thrown up will be slaked and left light by the frost of winter and April winds. Land thus fall plowed is left loose, and the air penetrates it till it is worked in the spring, thereby improving the subsoil for vegetation.

I have had better crops on land worked as above than before, as it lets the air mingle with the soil at a greater depth; water recedes from the surface quicker, and I can run my plow to a depth with ease that could not be done before.

Mexico, N. Y., Dec. 12th, 1864. HIRAM WALKER.

How to Improve Worn-out Land---Soiling

Seeing the inquiry of C. L. of Penn., a week or two since, as to the best method of keeping up the fertility of small farms, put me in mind of a communication I had prepared on the subject some time since, but I deferred sending it, thinking it might not be of value to any one; but if it will prove any service to him, and if you think it worth publishing, I will let him have my experience for what it is worth.

In the year of 1860 I took a small farm of fifteen acres. I put in the most of it to corn and potatoes, without manure, for I had none to begin with, and the land had been cropped for sixteen years in succession without any manure having been applied during all that period. The result was what all might expect, for I harvested ten bushels of corn per acre and twenty-eight of potatoes per acre. I found such farming would not pay me, so in 1861 I put down to clover all but about four acres, upon which four acres I put all the manure I had made during the winter.

In 1862, having no pasture, I was compelled, much against my will, to soil what little stock I had. I had neither seen or heard anything of soiling as a system, for I did not take an agricultural paper then. So, on the 15th of May, with many misgivings, I commenced cutting clover, and from then till the 28th August, I kept in the barn-yard, 28 ft. by 36 ft., one horse, two cows, one yearling steer, and two hogs, in perfect health and good condition, on the mowings from one measured acre. I had to contend with the sneers and prophecies of my neighbors as to the health of my cows and the quality of their milk; but I had the satisfaction of obtaining from my two cows more milk, and of a better quality than any of them did from any four of theirs which were kept at pasture or on the ROAD.

I thus made a large quantity of choice rich manure, which, being applied to the soil, and the plow put down a little deeper than heretofore, has increased the fertility of the soil astonishingly. I can now raise a crop, which, if not a premium one, is far ahead of my most sanguine hopes. I have since added, as an experiment, a small flock of sheep, which, after they have been in the yard sixteen months, are remarkably healthy. I am so much in favor of soiling, that were I to go on a hundred acre farm, I would not pasture a hoof on any land that could be cultivated with profit. I should say that my land is a moist sandy loam, well adapted to grass. I think if C. L. will adopt a system something like this, and put all his manure upon a comparative small space, and concentrate all his force upon it, and raise considerable roots, keep the balance of his farm in grass, and keep as much stock as possible, he will be satisfied with the results. R. D. SMITH.

Collamer, Cuyuhoga Co., Ohio.

An English farmer who had great success in growing roots, being asked how many times the land should be plowed for turnips, replied: "Plow it as many times as it requires, and then plow once more."

WHAT SHALL FARMERS DO?

What should be the aim of the farmer in the present extraordinary position of his business? This is a very proper question to ask at the present time, when the labors of the past season have closed, and while some time yet remains, before the opening of another spring, for a thorough consideration of the subject and arrangement of future plans.

The high price of almost every farm product operates as a strong stimulant to every farmer to make the most of his land; but a serious obstacle is met at the very first step by the extreme scarcity and high wages of farm labor. This dilemma is very likely to lead many to the old and unprofitable course of *skim-culture*, unless prevented by proper intelligence on the subject. Farmers will be tempted, in the hope of doing all they can with a small amount of labor, to omit practices essential to high cultivation and success. They will try to plant and sow fifty acres of land with a force scarcely sufficient to go over thirty acres in the best manner. As a consequence, they will plow wider and shallower furrows, and harrow the land hastily, and trust to good luck in giving heavy crops in return. Heaps of manure will either lie unspread, or if actually applied, will receive less harrowing, and be badly intermixed with the soil. Broad corn-fields will be marked with uneven patches, and be encumbered before autumn with a heavy growth of weeds. In other words, they will have selected, by such management, the very worst system, and that the least adapted of all to the present emergency. Skim-culture requires more labor, for what it obtains, than high farming. Every skillful manager knows that it is easier and cheaper to obtain a thousand bushels of corn from fifteen acres than from fifty. It is not because the successful farmer obtains occasionally a very large crop or a high price that he makes the business permanently profitable, but because he uniformly raises good crops without failure through all the vicissitudes of seasons. This he can only do by keeping his land in the best condition, and giving the best cultivation. The superficial manager sometimes sees an occasional or accidental good crop raised with little care; and he is tempted to try the same mode in other instances, with the hope that each will prove alike lucky, although the failures may be nine cases in ten—in the same way that weak-minded people venture their property in lottery tickets, although they know their chances are very slim for obtaining anything in return.

It should be a prominent aim at the present time to concentrate labor—not to spread it over an entended surface. The former, if well-directed, will be sure to bring certain returns; the latter, very uncertain profits at best, with a strong probability of failure. Cultivators, who uniformly raise good crops, are those who are careful never to waste labor—who do not apply manure to a wet soil where it cannot possibly afford a fair return; who avoid planting so late that a heavy growth is impossible; or who undertake so many operations that they can never properly accomplish any. They take time by the forelock—they refuse to begin any operation that they cannot carry through in the best manner—they keep all their operations in a compact shape—and by good calculation, and well laid plans, every thing is up to time. They thus obtain more from a given amount of labor than can be possibly reached in any other way. This is the very kind of management suited to the present emergency. The farmer who is compelled to pay two dollars a day to laborers, will receive more by such management than by spreading the labor over a broad and profitless territory.

Every one should know, long before spring commences, precisely what he is able to accomplish, and what he is going to do. If contingencies are depending, plans should be well laid for each contingency. Taking the number of days from the opening of spring until planting time, and allowing one-third at least for raining days and accidents, he should know by the amount required for each day's plowing, how he will come out in his undertakings. If he finds he has marked out too much, he ought to reduce at once the proposed extent of his operations. If he does not, he will be sure, in the first place, to do his work in a hurried manner, and secondly to plant too late—the two great leading causes of bad farming. These will be followed by weedy crops, because he will be behind hand all summer; and his labor, for which he pays two dollars a day, will really cost him four or five dollars, because it will be continually applied to a disadvantage,—to the wrong end of the lever. It is more than usually important, therefore, to examine and digest plans thoroughly during the present winter.

In the meantime, everything practicable should be done now that may interfere with the regular order of labor after spring opens. Fences should be repaired in open weather to prevent that worst of all interruptions—intruding animals. A half-year's fuel should be procured and prepared for use. All the manure that is accessible should be drawn out, and spread in the best manner where it is intended to be used—it will be of more value to the coming crop for this early application, and the ground will not be cut up and poached by the horses and wagon wheels used for drawing out the manure on the soft soil of spring; and lastly, and by no means least, procure the very best implements, and have them completely ready when the campaign opens. A hoe that will enable the laborer to accomplish fifty per cent more in work, will not be long in paying for itself at present high wages. The plow that inverts the soil in the best manner, and runs with the least force of draught, will add many dollars' worth of time to the man and team who use it throughout the season.

There is another very essential point to success—and this is that every manager should give close attention to the execution of every part of his plans. An eminent stock-raiser made it a rule to place his hand daily on every one of his animals. If anything went wrong he was sure to detect it immediately. If any improvement was suggested he was able to see it carried out under his own inspection. The extensive farmer will not be able to perform continued labor, for he should witness so far as practicable the operations of every department. And yet if he is a skillful worker, with his own hands he can not only correct many imperfections in the work of his men, but often throw new life into them in cases of emergency. The limited farmer, who has less to oversee, may, to a

greater or less degree, occupy himself with regular labor; but still if he is an observant man he will find that it is better to err by too much supervision than by a neglect of many important points involving considerable amounts, for the purpose of accomplishing a single day's work.

To sum up then—let the order for the coming season be—1st, well-digested plans; 2d, concentrated labor—or everything done in the best manner; 3d, the best tools in readiness; 4th, the performance of everything in winter that may interfere with spring and summer work; 5th, personal supervision of every department.

ONE-HORSE MOWING MACHINES.

I am a manufacturer of the "Buckeye" Mower, and the "Excelsior" Self-raking Reaper, and will answer your correspondent in your issue of Dec. 8th, inquiring "why one-horse mowers are not successfully introduced." The two-horse cuts, in mowing, 4½ feet, and many of the machines, nearly all, are heavy draft for *two* horses. Now for the principles indispensable in all machines: *Weight sufficient for traction to drive the knives sufficiently rapid to cut easily*—as each "section," (cutting blade,) cuts at the same moment, and a heavy amount of metal must vibrate rapidly, besides doing the work; this *traction* must be nearly as great in a one as in the two horse machine. Per contra—a four-horse machine, cutting nine feet, is successfully used on the prairies, and is *very easy* on four horses. A two-horse machine, reduced in all its parts one half, would in most cases be too weak for the purpose.

Again—in practice our two-horse machine seldom, if ever, averages a four foot cut—no driving can be accurate enough to use the whole "bar" by a half foot. This inaccuracy in driving, is power thrown away. A one-horse would be as inaccurate, and as much power lost—not *half as much.*

I notice various calls and hints in your journal, for western manufacturers to advertise their mowers and reapers. We have a few decidedly popular machines used in the West to the exclusion of several uncertain kinds. Each of us have a few spots in which we can sell all we make, and in these our advertisements are abundant. We sell at wholesale to parties in these spots, and they advertise, keeping extra pieces to supply their respective regions.

We build the best "combined" reaper and mower used anywhere in the world; yet I would not advise a man living where they are unknown to buy one, but rather to get such as are in use, and easy to procure duplicate pieces. J. R. S. *Fort Wayne, Ind.*

REMEDY FOR CRIB-BITING.

I believe I have discovered a remedy to prevent a horse from crib-biting in the stable. I have a very valuble pair of brown driving mares, one of which had become a confirmed cribber, and I tried all remedies that I had heard or read of, and I went to considerable expense and trouble to prevent this habit, but to no purpose. Finally I thought I would try and invent something myself, which would be of advantage to me in this respect. It is a very simple process, viz., to get a piece of thin iron, or an old wheel tire, say 1¼ or 2 inches wide, and raise it in a parallel position about an inch above the edge of the front and back side of the feed box, by fastening it at the ends and bracing it in the middle; and placed in this position the animal has nothing but the sharp edges of the box to catch hold of. And I assure you from three to four months experience, that you will find this remedy effectual. JOHN P. HUTCHINSON. *Chester Co., Pa.*

Butter from Three Cows---Dairy Management.

Mr. JOHN SHATTUCK, a very successful Dairy farmer of Chenango Co., who has received a number of prizes upon the excellent quality of his butter, believes that it should be made in larger quantities per cow than the general average, as well as of better character. He has heretofore contributed for the COUNTRY GENTLEMAN statements of the product he obtained, as for example, an average of 190 lbs. of butter in 1860, for each of 22 cows, 1 three-year old heifer and 7 two-year old heifers, (which he considered equal to 212 each for the full grown cows; and in 1861 an average of 223 lbs. each for 23 cows. He now writes us, under date of Jan. 9th, 1865:

I would state in the first place that we had the most scorching drouth the past summer I ever knew; the pastures were literally without green herbage from July 1st to Aug. 20th; hence the yield of milk was much reduced. I have talked with a large number of dairymen, and they estimate the quantity from one-fourth to one-third loss than usual, in consequence of this. Having disposed of my entire lot of dairy cows in December, 1863, I found it necessary last spring to purchase some cows or break up house-keeping, and concluding to continue the latter, made a purchase of three cows; one of them dropped her calf about the 20th of March, one of the others about the 10th of April; the other one had come in when I bought her, about April 10th, and her calf was sold. The cows were fed about two quarts of corn meal, (ground in the ear,) each, daily, until they went out to grass, and after that nothing except grass until the fall, when they were fed one wagon load each of pumpkins, and since foddering time what good early cut hay they would eat.

Total amount of Butter made.

Sold,	505 lbs.
Used in family,	165
On hand,	80
Total,	750 lbs.
505 lbs. sold for	$240.00
Used in family at 50 cts., 165 lbs.,	82.50
On hand at 50 cts., 80 lbs.,	40.00
Growth of hogs,	40.00
Two deacon skins,	2.00
Total amount,	$404.50

I do not wish to be understood as boasting of the above yield, but simply give the statement for the benefit of those dairymen who are satisfied with a yield of from 120 to 150 lbs. of butter from a cow. I have contended for a long time that no man should be satisfied with an average yield of butter from a dairy with less than 200 lbs. from each cow. A few hints in regard to management of cows, breeding, &c., and I will conclude this already too lengthy letter.

I think if farmers in the dairy districts would give a little more attention to the breeding of cows for their milking qualities, they would be greatly benefitted, as I consider it a very essential point to be attained. If one-half of the dairymen would sell about every fifth cow, so that the balance could have all they want to eat, another good point would be attained; if in making purchases they would reject all the poor ones, another essential point; and in cutting hay for milch cows they would cut early, cure well, and my word for it, it will pay. Good shelter in frosty nights and cold fall rains, moreover, is not bad treatment for cows. JOHN SHATTUCK.

We shall be glad to hear farther from Mr. S. on the subject to which he refers.

Eggs in Winter---How to Secure a Supply.

I recently received a letter from J. C. Thompson, Esq., of Tompkinsville, Staten Island, in which he mentioned having a liberal supply of eggs throughout the month of November, from his fowls, which are of the Brahma Pootra and Leghorn varieties.

Every poultry raiser knows how rare it is that hens lay liberally during that and the succeeding months of December, January and February, and I made inquiry of Mr. Thompson in regard to his management of fowls, to secure such desirable results. In a letter written me on the 6th day of the present month, he said, in reply to my inquiry—"I have confined in one lot, thirty Brahma hens and pullets, and they have laid in this month, including to day, (six days,) 82 eggs. In regard to 'how I manage to get so many eggs,' I will tell you what I do. Feed and *clean* water within their reach constantly, also shells or bones pounded, or old mortar; grass, cabbage or other vegetables, of which they are fond, boiled potatoes, turnips, or the peelings of them, and scraps from the table daily. The potatoes and turnips boiled with coarse Indian meal, or corn and oats ground together, and fed cold or partially so, *never hot;* scrap meat that comes from the tallow chandler's or pork butcher's in cakes, is good; make a hole bason-like, into a cake, and fill it with water, which affords them drink and softens the scrap so as to make it palatable to them. When they have picked it to pieces, soak or boil the refuse with meal, and feed it the same as the potatoes, &c."

In addition to this, Mr. Thompson gives his fowls warm, clean and airy quarters, as I know from observation. The concluding paragraph of his letter, quaint, though practical, is as follows: "Remember that hens are only *machines* for making eggs, and like the mill for making flour, if the grain is not put into the hopper the flour will not come out." As the grain is to the hopper, so is the feed, water, vegetables, lime, pounded shells, bones, &c., to the hens.

Mr. Thompson breeds but two varieties of fowls, the Brahmas and Leghorns, and those with great care and in their utmost purity. The latter were long his favorites, but he now considers the former, for all purposes for which domestic fowls are kept, superior. K.

Newton, N. J.

BRAHMA POOTRA FOWLS.

It is now nearly three years since I commenced keeping the Brahma Pootra fowls, and my experience with them has been of a most satisfactory character. With other breeds it was very unsatisfactory, and my publicly expressed opinion is, that for general purposes no known fowls can equal them. I secure an excellent repast for the table, their flesh being white, tender and juicy, with a flavor which I do not think would be objectionable to the most fastidious palate; their eggs are large and very rich, and like most Asiatic fowls, more or less buff-colored. They do not lay all their eggs in the spring and summer, but very regularly throughout the year.

The general complaint from persons who keep fowls is, that they fail to obtain a supply of eggs in the winter season. Their hens lay well enough in the spring when eggs are plenty, but what they want is a fowl that will lay eggs in the winter, when eggs are scarce, for thereby a large amount of the expense of keeping throughout the year is saved, and you are not annoyed with breaking stale eggs. I can assure your many readers that my individual experience, together with the experience of many of my neighbors, proves that the Brahma Pootra fowl possesses this highly valued quality of laying in winter.

I keep about twenty-five hens; my mode of feeding is nearly as follows: A supply of grain, (corn, oats or barley,) is constantly kept within their reach; oyster shells always obtainable; fresh spring water of its natural temperature in the warm season, and luke-warm water in the winter; after cold weather sets in, and bugs and worms are not to be had, I give as often as twice a week, pork and beef scraps, or meat cut fine. They are housed in a warm and comfortable house, frequently white-washed throughout; clean nests, plenty of ashes for a dust-bath, and attention sufficient to see they are comfortably cared for, and I have no lack of eggs throughout the year.

They are not the greedy and voracious feeders many would have us think: their habits are such they will oftentimes lie for hours in a cool, shady place in the summer, and bask in the rays of the hot sun in the winter; they do not require the large amount of food so necessary for those breeds which keep a continual scratching, and are never at rest except when on the roost.

The credulity of some people is beyond comprehension; but the credulity of those who believe they can obtain a good supply of eggs from fowls half starved, with no comfortable habitation, and no attention to their comfort or other wants, is a weakness which only time will overcome; and you may rest assured time will do it, for "experience makes fools wise," and if by losing, they gain knowledge and wisdom, then are they gainers by the loss.

I should just as soon think of getting a good day's work from a laborer who had been deprived of the necessaries of life, and reduced to a trembling weakness, as to obtain eggs from hens in a similar condition. The inference is clear; attend to their wants, and you will have the gratifying assurance that they appreciate your attention, by the large numbers of eggs you will find in your daily round to their nests. O. H. Peck.

Melrose, Mass., Nov. 26, 1864.

DUTCH OR COTTAGE CHEESE.

Put a pan of fresh, thick milk over a moderate fire. Let it remain until the whey is separated—care being taken that it does not boil. Drain off the whey; add salt to your taste—also cooking soda in the proportion of the size of a pea to six quarts of milk. Mix with good thick cream (sweet or sour) or cream and butter, and make up into balls for the table. The whole process will occupy about fifteen minutes.

Excelsior Rice Pudding.

One cup rice swelled; one quart milk; yolks of four eggs, one nutmeg. Sweeten to your taste. Bake the above one hour. Then beat the whites of the eggs to a stiff froth with white sugar and spread over the top. Bake the whole one minute. Serve hot or cold as you please.

The foregoing receipes you can recommend with confidence, for they have been in use in our family for several years. They were *invented* by Mrs. P. P. B., but *not patented.*

THE FARMER'S PUDDING.

Take four heaping tablespoonfuls of fine corn-meal; three large spoonfuls of wheat rusk, finely pounded, and soaked one or two hours previous to mixing with the meal; add three-fourths teacupful of good molasses or syrup, a little salt to season, and a cupful of sweet cream, or butter the size of a small hen's egg; put in carbonate of soda, if at hand, size of a large pea, pulverized. Stir all well together, and just as it goes into the hot oven, pour in a half-pint of sweet milk, and stir again. Water will answer instead of milk. We think you can enjoy this as a dessert. S. W. J.

PUERPERAL FEVER IN COWS.

MESSRS. EDITORS—As an evidence of the value of agricultural publications, and a refutation of the assertion so often made by the ignorant and unthinking, that book-farming is a humbug, and in gratitude for the benefit received, I wish to say through the medium of your paper, to its many readers, that I have saved a valuable cow through instruction derived from Dr. Dadd's book on the Diseases of Cattle, and "Youatt's and Martin's Cattle Doctor."

The cow was first discovered to be ill on Sunday morning, the 6th of the present month, she having calved the day previous. On going to the stable to strip her out, she was found lying down and unable to rise, though making frequent efforts to do so. I at once consulted the above mentioned works, and found her case fully described under the head of Puerperal Fever. I adopted the treatment recommended chiefly by Dr. Dadd. Youatt and Martin recommend bleeding, but I regard physicking as being more philosophical, as well as more safe, especially so in the hands of the inexperienced.

The symptoms of her case were as follows: Frequent but unavailing attempts to rise—the weakness seeming to be in her hind parts,—turning her head to her left side, looking wildly about the eyes, breathing very quick, together with heaving at the flanks, muzzle dry, and she took no notice of her calf.

The treatment was 1¼ pounds of Epsom salts for the first dose, and eight hours later, no evacuation having taken place, ¾ of a pound more were given with a like result. The third dose was given some ten or twelve hours after the second, and consisted of a pint of raw linseed oil; some 24 hours subsequently half a pint more of the linseed oil was given, and still later ¾ of a pound more of salts before anything much could be got to pass her bowels. In the mean time, several injections of strong soap-suds were given, which I think aided very materially in effecting a passage. It will be seen by the above that I did not follow strictly the direction given in the book to repeat half the first dose every six or eight hours until an evacuation is had; had I done so, the desired result would no doubt have been obtained much sooner. A wash of strong vinegar and salt was applied warm to her back and loins, and strong ginger tea was given at times when she was bloated, in consequence of the gas generated in the stomach by the food remaining there undigested. The result is I have saved a cow for which $80 was refused a few days previous to her sickness. A few years ago we lost two cows whose symptoms of disease were the same precisely, and had I possessed then the information which I now do, I have no doubt but that I could have saved them. One of them was the best milker we ever owned—giving one season 23 quarts of milk per day for 26 days in succession.

Perhaps there is no branch of agricultural knowledge in which farmers are more deficient than in that relating to their domestic animals. Hence the barbarous treatment usually resorted to of the docking of tails, and boring of horns, and forcing down the poor animal chunks of salt pork to give her a cud, &c., all of which is generally useless, besides inflicting needless suffering on the poor dumb beast. A more enlightened treatment would save many a valuable animal to its owner, and thousands of dollars annually to the country at large.

Should any one not have either the salts or linseed oil at hand, slippery elm tea made very strong might answer a good purpose; as a friend informed me a few days ago of a man who had a lot of cows get into his barn and gorged themselves with grain which was threshed and lying in a heap upon the floor. The man thought he should lose the whole of them. My friend directed him to boil up slippery elm bark very strong and give them. The result was that every animal was saved. J. W. FOWLEE

Peekskill, Westchester Co., N. Y., Nov. 16, 1864.

GUANO.

Last spring, upon the recommendation of an excellent practical farmer and gardener, I was induced to obtain for trial a few hundred of ammoniated guano, and accordingly applied to Messrs. George Davenport & Co. of Boston, for the article. The season was so far advanced when it reached me that I had no opportunity of trying it in the hill for corn, but experimented with it as best I could, and though the season was unfavorable in consequence of an unparalleled drouth, to the highest success of any late sown manures, the results from the guano were very marked, so that I am confident of doing the cultivators of the soil some service by relating them.

The soil on which my experiments were tried is a loam inclining to clay, and underlaid by limestone. From the nature of the underlying ledges, broken by many fissures, the land is sufficiently dry for any practical purpose of cultivation, it being dry enough to work well in a short time after the heaviest rains.

My application of guano to corn was after planting, by putting a tablespoonful around each hill where the experiment was tried. The effect was to give a deeper green color to the blades, and push forward the growth. The part where the guano was applied gave the heaviest growth of both stalk and ear.

It was applied to potatoes by putting the same quantity in the hill, after the potatoes were dropped, but before they were covered, care being taken not to have the manure touch the potatoes. They gave a remarkable fresh growth of tops, and the yield was excellent.

The effects of it sown broadcast on grass and grain was such as to commend it for general use.

For turnips it showed a decided improvement. It made large, tender roots, all remarkably free from the depredations of insects.

I found it excellent as a garden manure, not only from its fertilizing effects, but from its freedom from the seeds of weeds. The produce of pompions, squashes, melons and cucumbers was largely increased where it was used. Its effect on fruit trees was such as to entitle it to commendation.

How favorable it may be in its effects, having used it only one season, I am not prepared to say, but if it continues only for a year, it is well worthy of more general use, especially for root crops and for gardens.

I have heard many complain that guano burnt up their crops, and denounce its use in consequence. This is all owing to a misapplication. In the hurry of business the guano is thrown upon the crop carelessly, and often, no doubt in parcels too large. In such cases it is not surprising if it proved too strong for the tender roots, and exhausted them. But when it is properly mixed with the soil no danger from such a cause need be feared, and the more thoroughly it is mixed, the more permanent will be its effect. *.

BUILDINGS AND FENCES.

The present high price of lumber deters many farmers from erecting new buildings or constructing new fences. This should not prevent them, however, keeping what they have in perfect repair. Unless constant vigilance is exercised, everything of the kind will become more or less dilapidated. During the frequent mild and open weather of winter, opportunity should be taken to examine everything of the kind. If boards that are becoming loose on fences are securely re-nailed to their places, it will prevent their being torn or falling off, and becoming broken. If a single board has dropped, it should be replaced immediately, before cattle or colts have been tempted to pass over, learning them to jump, and perhaps breaking down the rest of the fence. Nothing of the kind should be patched up in an imperfect manner. If a board is broken midway between posts, a careless nailing of the fractured parts together will not be likely to last long. Either procure a new board, or place another nearly as long as the distance between the posts against the broken one, and nail firmly to it. This may seem like a small matter, but as a single gap will let a hundred animals through, it should be promptly attended to.

Where fences are liable to be pressed against by unruly horses, they should be made stronger than usual. A very secure way is to nail two top-boards, one on each side of the post, and surmount the whole with a cap-board, as shown by section in the annexed figure.

A fence thus constructed, and the cap board well nailed on, will be nearly as stiff as a stick of solid timber of the same breadth.

Barns often become open and out of order, and decayed, by simple neglect. If the boards become loose they are allowed to remain so until the winds rattle them off. They twist and curl up at the edges, and no pains is taken to replace them. The open cracks thus left allow the winds to sweep through to the discomfort and consequent want of thrift in the domestic animals which they are intended to shelter. Barns something like the one represented in the annexed figure, may be occasionally seen in various parts of the country, and have become so simply by the want of little attentions. The underpinning was hurriedly built or allowed to get out of order, and the sills consequently settled down and became decayed, and the whole building was distorted. Heaps of manure were allowed to accumulate around the bottom, and thus accelerated the decay. When a shingle was loosened, the rain passed in and rotted whole patches of roof around it. The distortion of the frame threw the doors off their hinges or caused them to sag and drag on the ground, soon reducing them to the appearance shown in fig. 1. This continued neglect is the only reason why this barn does not look so well as the one shown in fig. 2, which has been carefully attended to, and kept in good order.

Some years ago we came into possession of a place on which a barn stood considerably resembling the one shown in the first figure, having been built over twenty years. The roof showed decided weakness in the back, and hung down in the middle, besides leaking. The vertical siding had in many places gaped open an inch wide, and part of the sills were rotten

Fig. 1.

by contact with earth and manure. We were advised to throw this barn aside and build a new one, but concluded to repair it. It was raised a few feet from the ground by means of screws, new sills were inserted where necessary, and an underpinning seven feet high placed beneath them, thus giving a fine winter shelter or stabling for cattle. The old shingles were torn off, the rafters replaced in position, the timbers screwed straight, and the siding all around made perfectly tight by nailing on battens an inch thick and three inches wide, slit for this purpose. The cost of

Fig. 2.

all these repairs was about one-third the amount required for a new barn. The underpinning, the barn being over fifty feet long, cost a little less than a hundred dollars—the sand being found on the premises, while the stone were drawn from the adjacent fields to their decided improvement. The battens did not cost more than one-fourth the expense of ordinary siding, while they gave the whole a neat appearance, and with the siding were stiffer than boards alone. The whold exterior then being washed with a mixture of waterlime, sand and salt, colored lightly with brown ochre, has nearly the appearance of a new structure, and is but little inferior in appearance to to the barn shown in the second figure.

SOWING FLAX WITH BARLEY.

Some time ago I noticed a communication from J. A. McCollum, giving his result in growing these two named together, and last spring, having a suitable field, I tried the experiment, and can say with me the result was far more profitable than I expected. From ten acres of ground I raised 308 bushels of barley, which I sold for $2 per bushel, and from the same field got 58 bushels of flax, which I disposed of for $2.50 per bushel—making in all, $761, having the fodder besides. Now to all appearance, I could not detect that the flax injured the yield of barley in the least, and from this result I am disposed to try it again.

Buffalo, Dec., 1864. SYLVESTER JONES.

FRENCH FOWLS.

M. Lavergne, an able French writer, and author of a work on the Rural Economy of England, Scotland and Ireland, after admitting that England is far ahead of France in nearly every department of agriculture, says: "But France retaliates in another branch of animal products which is hardly second in England, but is very considerable with us—that of the poultry yard. We have done for our poultry, what the English are doing for their cattle, sheep and pigs. We have developed them with regard to precocious fattening and general tenderness; we have added to their fineness, whiteness and exquisite flavor."

The Crevecœur Fowl.

The Crevecœur is considered one of the most popular breeds of French Fowls. For general utility it is one of the very best varieties, and in most general request for the table. The body of the cock is bulky, somewhat square, short and broad, and low on the legs; plumage dense and copious, the color black, with bronze, bluish, and greenish reflections on the neck and long feathers.

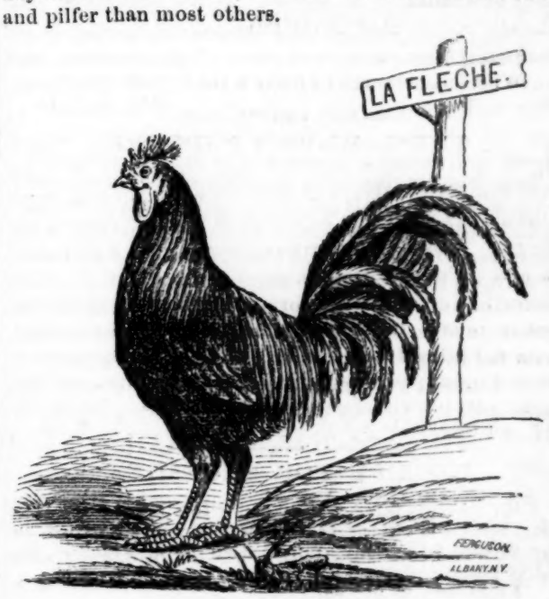
M. Jaque, an experienced breeder, says—"that this certainly produces the most excellent fowls which appear in the French markets. Its bones are even lighter than those of the Houdan; its flesh is finer, shorter, whiter, and more readily takes on fat. The pullets are of extraordinary precocity, since they may be put up to fatten at the age of three months, and they are ready for the table in fifteen days after. At four months old a fowl of this breed has reached its full perfection as to weight and quality. A poulard of five or six months attains the weight of six and a half pounds; a pullet of six months, fatted, weighs four and a half pounds dressed. It is this race which produces the fine poulards and pullets sold in the markets of France. Those of the Houdan race, although of superior quality, only come after them. The Crevecœur is the first race in France for delicacy of flesh, ease of fattening and precocity, and we believe that it is the first in the world in these respects. It is one of the best for crossing; all experiments go to prove that when crossed with the pure Cochin, or with the progeny of a pure Crevecœur and a pure Cochin, they produce a hardy race of large size and very delicate taste.

The hen produces large eggs, and is an excellent layer; in the comparative trials made in the Zoological Gardens, she was second in this report—but scarcely ever sits, and the eggs must therefore be hatched by other fowls. In many parts of France turkey hens are made use of for this purpose, as they can be taught to sit almost at any time.

The Crevecœur fowls are described as of very compact form, with small top-knots bearded, and with horned combs like those of the Polish, only very much larger. There would appear to be two varieties, since the hens are represented in one case as quite black; the cock also of that color, but marked with yellow on the back, neck and top-knot; the latter is a very heavy bird, weighing no less than seven and a quarter pounds; the hens bring four and a quarter. The eggs are large and white; legs unfeathered.

The Houdan Cock.

Another popular breed of fowls in France is the Houdan. It is reared and fattened on the farms around Nantes, and immense quantities are sent to Paris. The Houdan is to France what the Dorking is to England. We annex a portrait of a Houdan cock. The breed is somewhat above the ordinary size, with a round body well developed and set on short legs; plumage sprinkled with black; black white feathers. Like the Dorking they have five toes. Among the recommendations of this breed are the lightness of their bones and the fineness and bulk of their flesh. They are besides admirable layers. In the trials in the Zoological Gardens of the Bois de Boulogne, to determine which breed produces the most eggs, the Houdan stood third. The eggs are beautifully white, and of considerable size. Like all breeds that lay long and plentifully, the hens are not good sitters. The chickens are more easily reared than any other French breed, and are less inclined to wander and pilfer than most others.



The Lafleche Fowl.

"The only other French breed to which we have space to allude, and that very briefly, is that of La Fleche. In

an erect position the cock is the tallest of all the French races, the body appearing smaller than it really is, owing to the feathers lying close to the skin. The plumage is entirely black, with the occasional exception of some of the short feathers of the wings and tail being tinged with green and violet reflections; the head and wattles somewhat resembling the Spanish. They fatten very readily, and the flesh is of the best quality. Eggs good, and of remarkable size. As layers La Fleche stood fourth in the experiment trial; the Dorking coming next. The Nankin and Brahma Pootras, it will be recollected, stood first in this trial as the most prolific layers."

We are not aware of any of these French fowls having been imported into this country. The ridiculous hen-fever which raged so furiously some twenty years ago, had the effect of inducing a more general attention to the rearing and management of poultry. Though the rage for large fowls has in a measure passed, the influence of the big Asiatic breeds is still felt—and felt, we think on the whole, for good. They have improved the size, if not the quality of our common fowls, and given us better layers. There is, however, still room for improvement of our stock of fowls, by the introduction of new breeds; and the infusion of this French blood would, we think, give stamina and vigor to those breeds that have been weakened by in-and-breeding. The Dorking, for instance, may be improved by a cross with the Houdan or Crevecœur. C. N. BEMENT.

PIE AND OTHER CRUSTS.

MESSRS. EDITORS—I saw an inquiry in your paper by W., for a recipe to make a plain pie crust, and being rather partial to plain food, will send the one I generally use.

Take of lard and water equal quantities, and salt the lard if fresh. Then mix it with the flour thoroughly, adding the water afterwards.

If a richer crust is desired, roll a part of the same thin, and spread with butter, then roll together and use as an upper crust, taking the other half for the under crust.

Crust for Chicken Pie.

Take 1 pint of butter milk,
1 teaspoonful saleratus,
1 do. salt,
2 tablespoonfuls butter,
With flour enough to make a paste sufficiently thick to roll into a thick crust.

Paste for Dumplings and for a Stew, either Chicken or Veal.

1 pint milk,
2 teaspoonfuls cream tartar,
1 teaspoonful soda,
1 teaspoonful salt,
With flour enough to make a thick paste.

MRS. J. C. L.

THE FARMER'S PUDDING.

Take four heaping tablespoonfuls of fine corn-meal; three large spoonfuls of wheat rusk, finely pounded, and soaked one or two hours previous to mixing with the meal; add three-fourths teacupful of good molasses or syrup, a little salt to season, and a cupful of sweet cream, or butter the size of a small hen's egg; put in carbonate of soda, if at hand, size of a large pea, pulverized. Stir all well together, and just as it goes into the hot oven, pour in a half-pint of sweet milk, and stir again. Water will answer instead of milk. We think you can enjoy this as a dessert. S. W. J.

RECEIPT FOR SAUSAGES.

Your receipts for sausages came too late to try this year, but I don't think they would be quite as good as the receipt which my grandmother used, which is, for thirty pounds of meat:

Eight ounces fine salt,
Two and one half ounces pepper,
Two teacups sage,
One teacup summer savory.

Westford, Vt. M. P. S.

IMPORTANCE OF THE GRAPE.

The apple is universally and justly admitted to be the most important of all fruits. Its hardiness, productiveness, ease of culture, and long continuance—and the facility with which it is kept and ripened—all concur to place it first in general value. What fruit comes next? Some would name the pear; others the strawberry; while others again regard the peach, on account of its great excellence, and the facility and rapidity with which the trees are grown, as scarcely second in importance. Whatever present views may be on this point, there is no doubt that by the next twenty years, the GRAPE will be universally admitted to be second only to the apple. This opinion refers to its uses as a fresh fruit only, and not at all to its manufacture into another substance entirely unlike the fruit, both in its chemical character, and in its effect on the human system.

New varieties of American hardy grapes are yearly springing into existence, that possess considerable promise of permanent value and excellence; and by the lapse of another score of years, we shall unquestionably have a series that will give us good fresh fruit from a period soon after midsummer till the succeeding spring. We already obtain in the Northern States, fresh grapes from the end of summer to the latter part of winter, by means of the following varieties: Hartford Prolific, Delaware, Crevelling, Concord, Diana, Rebecca, Isabella, and others. The best keepers appear to be the Diana, Rebecca, and Isabella—to which may perhaps be added the Clinton, a variety not good enough to eat under ordinary circumstances, but which if kept till after midwinter, has its sharpness so softened as to become not only pleasant, but sought for its rareness at that season of the year. The Diana is remarkable for its freshness after several months keeping.

To the preceding list we shall be able probably to add the Adirondac for its extreme earliness,—preceding the Hartford Prolific, superior to it in quality, although requiring winter covering in the North. The Concord, possessing the several characteristics of great hardiness, productiveness, freedom from disease, and showy appearance, yet not of very high quality, may be partly displaced by the Iona and Rogers' No. 19—although neither of these new sorts have been sufficiently tried in different localities to insure them a permanent position, or to give all cultivators full confidence that they will not share the fate of such highly lauded fruits as the Peabody strawberry and Van Mons' Leon le Clerc pear.

There are now a large number of new grapes, raised both by cross-fertilization and otherwise, that promise to extend the period of ripe grapes to a greater length than at present. That period is now only preceded by the apple and pear. The apple now reaches through the whole yearly circle—or as Beecher expresses it, "it belts the year." The pear ripens from midsummer till spring; but it is hard to get good pears much later than the first of the year, while grapes are kept as easily as winter apples, although in a different way. The peach, in the north, continues to ripen scarcely two months at furthest—the plum about the same—while neither will keep long in a fresh state. The hardy grape will yet give us a delicious fruit,—remarkable for its wholesomeness, in unlimited quantity if we desire it, scarcely if ever failing with seasons,—not less than eight out of the twelve months of the year. The "grape fever" will not, therefore, subside quite yet.

BEE HIVES.

Hives should be made in winter. If they are to be painted, it should be done some months previous to using them, that the offensive smell of the paint may pass off before introducing the bees. Swarms put into newly painted hives, especially dark colored ones, are quite apt to leave. Let the color be light, but not a clear white. It is well to alternate different colors in the yard, that the bees may more readily recognize their own hives. It is yet an open question whether painted hives are desirable. Were it not for their improved appearance, it is doubtful if the advantages would balance expenses and losses incident to their use.

But what kind of hive shall be made? The wants of the bee itself are few and simple. A barrel, box or any cavity which will hold combs for brood and winter stores, is all it demands. In ordinary seasons, a colony will store in such a place, more than is needed for winter consumption. But with this primitive arrangement, the best stores are mixed with pollen, decidedly an unpleasant compound to most persons. Hence the necessity of some contrivance by which to separate the bitter from the sweet. When it was ascertained that a partition in the hive, with holes for communication, would keep the honey separate from the pollen, an important discovery was made. Here was a fruitful field for generations of patent venders. Each had a new form of division, or a new shape for the passages, and all are more successful in obtaining patents than in anything else. In many of these, there is nothing detrimental to the bees, which is often the most that can be said in their favor. And to charge from $5 to $10 dollars for the privilege of using such, is ridiculous, if not unjust. I never saw a patent vender of this description who did not aver that enormous quantities of honey could be secured by using his hive, all to be attributed to the peculiar screw, button, or cross-stick, upon which the patent happened to be based.

Bees will store *most* honey when they have but one apartment of a size that will just be filled by the end of the season. When this is divided, and the bees have filled one and are forced into another for want of room, they will lose a little time before commencing in the second. The greater the length and the less the number and size of the passages, the longer the bees will be in commencing work there. Hence, to obtain the largest amount of honey, the passages must give ample room for the bees. But if this is carried to an extreme, the whole partition will be taken away, and the original objections again arise.

The *greatest* amount of surplus can be obtained by placing the boxes directly on the frames of the movable comb, or on the slats of the cross-bar hive, where the heat generated by the bees below will keep them warm; but this honey is not always of the purest quality. By laying strips of wood a quarter of an inch square upon the frames cross-wise, a great difference in the purity will be observed. These ends can be secured with the common box hive, as well as with the most costly patents.

To secure the surplus honey in good form and quality is the fundamental principle in all bee culture, and all patents, of whatever form or purpose, must be subordinate to it.

The bee-keeper has often noticed that some of his hives have more honey than necessary for winter, and at the same time that others have but a partial supply. He has wished to be able to transfer some of the surplus to those deficient. His bees have over-swarmed, sending out many small ones not worth hiving, and reducing the old stock to ruin. How can he remedy this? He has reason to suppose a queen is lost. Is there no way to ascertain without taking more trouble than the stock is worth? A colony has filled its hive, and many of the bees are crowded outside, losing valuable time, yet refusing to swarm in season. Is there no safe way of dividing the bees and making another swarm that can be at work? Mr. Langstroth has given us a movable comb hive with which all these and other operations can be performed. Many others, following in the path he has opened, have patented a variety of forms, some of which are no improvement.

The question, Will it pay? should be discussed and answered affirmatively before obtaining this hive. It is not claimed that bees will work faster in this than any other hive. Very much depends on the person who has control, and the number of stocks to be managed. On one side there is the cost of the right and increased cost of construction. On the other is the convenience of readily securing the advantages just mentioned. If a man know too little of the natural history of bees to take advantage of even a part of the facilities offered by movable combs, he had better be content with the simple box.

To winter bees successfully it is necessary to keep them warm, and at the same time dispose of the moisture always generated in the hive. Several patents have been granted for particular openings, and the manner of condensing the moisture, which are no improvement on the box hive with the holes left open in the top. Some are made with double walls, enclosing a dead air space. This retains the warmth, but does not get rid of the moisture. Straw is valuable in absorbing moisture and retaining heat, and bees will winter in the open air in the best manner possible in hives made of this material. Corn cobs are highly recommended for the same purpose, but unless they are superior to straw, the trouble of preparing them will be so much more that they will be rejected. From the thousands of little air cells in the leaf of the cat-tail, this would seem to be even better material than straw or cobs. The conical shape of the old fashioned straw hive is not adapted to improved bee culture, and if straw is used, some of the new forms should be adopted.

Nearly if not quite all other pretended conveniences in a bee-hive are balanced by a corresponding evil, perhaps created by this very convenience. I advise bee-keepers to generally avoid patents, and adopt hives with reference to *quantity, quality* and *form of surplus honey—facility of operating with the bees, and advantages for winter ventilation.* M. QUINBY.

St. Johnsville, N. Y.

MILK GRAVY.

The principal food of numerous families in the United States, consists of fried pork, pork fat, bread, and potatoes. Fried pork, in particular, mounts the table. Three-fourths of those who use the fat fried out of the pork for gravy, could easily furnish milk and cream, and form a dish much more luxurious, without any additional expense.

Add cream to your milk, if you have it, and make your gravy; firstly, take out your pork from the frypan, as soon as well done through, and all the fat except about two or three table spoonfuls. Wet up a large spoonful of flour with cold water. Stir this into the fat while hot, and in a few seconds add your milk, two cupfuls or more, and stir the whole together; let it boil about five minutes with the pork in it, or not. This makes a healthy and palatable gravy. Clear pork grease is bad for the system when used in daily food. It tends to scrofula. S. W. J.

Some persons put a great deal of money in stocks who should be put in the stocks themselves.

HEN MANURE AND NIGHT SOIL.

"L. R. T." of Oneida, N. Y., wishes, in your paper of Jan. 5, to know how to prepare and apply hen manure, and I give below my method of doing so for years past.

Take good soil from the surface of a field, or woods earth, and put it under cover, with which compost the hen manure at the rate of one bushel of manure to twenty of earth, adding thereunto the contents of all the privies and the chamber lye from the house daily, with a liberal allowance of ground plaster, and the spent ashes of the farm.

A month before using, cease adding to the heap, and turn it up once or twice a week, carefully breaking all lumps with the shovel. It will lose all unpleasant smell, and my men do not object to dropping it in corn hills with their hands or sowing it along turnip rows, &c.

As soon as one heap is finished, I begin another, and never fail, when planting time comes round, to have enough compost to give eighteen acres of corn a vigorous start, and some left for turnips and other vegetables. I think it much superior to anything I can buy—and it is made up from materials which are sadly neglected on many of our American farms. Try t, for it will repay all its cost. J. G. W.

Burlington Co., N. J.

INDIAN CORN AND POULTRY.

Raising corn and poultry occupies a share of my time, and makes a very prominent item in my profits, as well as those of the farming fraternity at large. I propose to give some ideas, as well as experience, in managing and producing these two necessaries as well as luxuries of life.

It has been doubted by a large share of the producers of corn, whether it was judicious to manure corn in the hill with common barn-yard manure. If the season should prove wet enough, it would urge the crop forward to an undue growth of stalks, and being stimulated to grow in the earlier part of the season; but about the time for the ears to set and grow, the roots of the corn have got far beyond the manure, having previously absorbed most of the strength of the same, thereby causing a large growth of stalks and a diminished quantity of corn.

I have manured corn in the hill in this way, and the season proving dry, I was satisfied it was a great injury to the crop; but if people would begin far enough in advance of a crop of corn to prepare the ground, apply manure without stint to make the corn grow whether the season proved just favorable or not, they certainly would have a fair crop if well attended to, but with the addition of some extra fertilizers in the hill to give it an early start while young, and the season not very warm, would add very much to the amount of corn raised. This extra fertilizer I believe almost every farmer has within his own reach, in the form of hen manure. I speak from my experience and the experience of my neighbors, that I shall be confirmed in saying that if a warm dry hen-house is prepared with facilities for saving all the accumulations from the fowls, and they being fed with an ample supply of corn for the year, and their manure judiciously applied to the corn in the hill, that there would be enough extra raised to feed them another season from the effects of their droppings.

As there has been considerable discussion as to whether poultry-raising was profitable, I think if farmers would experiment on this application, they would realize a profit in a two-fold ratio. Their corn crop would be more remunerative, and when feeding the fowls they would be better satisfied to feed liberally, regarding them as co-workers for profit, and not as pests on the farm. As it makes from one to three-quarters difference whether labor is well directed or not, it would seem as if the farmer's interest would stimulate him to avail himself of every opportunity to improve, both from observation and agricultural reading. I have sometimes thought that if farmers would take as much interest in trying to improve themselves and their farming interests, as do many editors of our best agricultural journals, they would be amply compensated by realizing a certain independence and well lined pockets. D.

Saratoga, N. Y.

AN UNPATENTED HORSE-FORK.

MESSRS. EDITORS—If you think proper please insert the following in your valuable journal, and you will enable me to pay a debt of gratitude to J. L. Ingalsbe, for his truly brotherly feeling in giving to the patrons of the Co. GENT., the full and concise description for making the unpatented horse-fork of his invention, as found in the Co. GENT. of March 31st and April 7th, 1864.

Immediately on getting his plan I set to work to make one, and had it ironed off according to directions, and as we made our own ropes and pulleys, it would bring the cost of the fork within Mr. Ingalsbe's estimates.

We used it through the last haying season, and it worked to our entire satisfaction; in fact the best of any I ever saw work—and would say to those who have not got a horse-fork and need one, get Mr. Ingalsbe's plan, and like us, be benefitted many times the subscription price of the Co. GENT.

West Perth, Dec. 16, 1864. J. H. SWOBE.

ONE-HORSE MOWERS.

MESSRS. EDITORS—In my COUNTRY GENTLEMAN of Dec. 8th, "Populi" asks you or some of your "mowing machine correspondents," why there are no one-horse mowers in the market? With your permission I will inform him that there is one—and it is a *real* one, in the sense he uses the word, in size, weight and draft. It was got up especially for that class of farmers whom "Populi" mentions. Several of them were used in my town the last season, and some in a neighboring town. Two mowers were drawn by horses not weighing nine hundred pounds, and one of them not over eight hundred and fifty pounds. The owners told me it was not hard work. It cuts three and one half feet wide, and a fair walking horse will mow an acre an hour. This I am told by those who have tried it.

A boy, medium size, fifteen years old, run one all the time. His father told me it spoiled all the boys in the neighborhood, for mowing by hand. We have used a two-horse mower in company with a near neighbor, for two seasons past, but shall sell it and get one of these, as we keep but one hoase; then we can do our own haying in our own time.

There is none of that stiffness about it which many mowers have, it being flexible in all its parts.

Last season was the first of its manufacture. All the mowers sold which were made, and gave unbounded satisfaction, as many letters I have seen show.

It will be advertised in the COUNTRY GENTLEMAN the coming spring. Its name is Cayuga Chief, No. 4.

Sidney Center, Maine. J. S. GRANT.

MANAGENENT OF POULTRY.

MESSRS. EDITORS—I have long thought of writing you some account of my experience in keeping hens. I believe that I have learned some things within the last three years, that I had never thought of or known before.

Hens fed on corn when they run in the fields, will generally do well enough, but I often hear the remark that hens confined in narrow limits, and fed with all the corn they will eat, do not continue to lay well, do not pay the cost of keeping, and my own experience confirms these statements.

Living in the village, where it is not proper that hens should run at large, I have kept mine mostly confined in a small barn for shelter, and to roost and lay in, with a small yard attached for them to run in, and think I have succeeded wonderfully in getting income from them.

For feed, I use buckwheat hulls and shorts of wheat or buckwheat. I take half the bulk I wish to feed at one time, of buckwheat hulls, and pour enough boiling water upon them to saturate them well, and let them stand a short time; I then take an equal bulk of shorts and mix it thoroughly with the hulls, and feed warm; they need no other watering; food prepared in this way serves for food and drink. The cost, three years ago, when feed was at ordinary prices, was from two to three mills per head per day.

This manner of feeding is a natural one. Hens that run at large, fill their crops with a large share of light stuff, almost anything but solid food. When they are confined, they cannot get such food unless it is fed them, and it is difficult to supply them, as they get it when they run out. I think the hulls supply that want better and cheaper than anything else that I know of. If I had a machine to cut grass, or turnip and cabbage leaves, or almost anything a cow would eat, mixed with shorts, it might answer about the same purpose.

From twenty-eight hens, I got, in one year, three thousand eggs, besides hatching over one hundred chickens. I think I did not fail, any day, from some time in December, until I disposed of the hens the following fall, to get more or less eggs.

To accomplish this result, you must have pullets hatched as early as April. Sometimes those hatched in May will do, but they will not begin to lay quite so early. I have a pullet, hatched about the last day of April, which has laid thirteen eggs in the last fifteen days. She has been kept confined, and kept and fed the same as my old hens, since she was old enough to do mischief in the garden.

Old hens, or late pullets, will not lay much in the winter, if any.

My hens are of no distinct breed, but have enough of Chittagong blood crossed on the common stock to give good size.

Lately, I have been quite successful in breaking hens of the inclination to set, by tying a piece of scarlet cloth to the end of their tail feathers. A bit of waxed thread will hold it fast. JACOB POWERS.

Brandon, Vt., Dec. 1864.

LICE ON FOWLS.

It is almost impossible in the "best regulated families" of fowls, to be utterly exempt from those little perplexing pests, "lice."

I have tried various remedies with partial success. Of all the remedies I have tried, I have found kerosene oil the most efficacious. Have used it in several instances, and it has invariably produced the desired effect, which was complete extermination.

I have applied it very freely, and have never perceived any injurious consequences to the fowls, resulting from its use. O. H. PECK. *Melrose, Jan. 7, 1865.*

SWEET POTATOES AT THE NORTH.

Having for many years entertained the opinion that sweet potatoes could be successfully grown at the North, I sent last spring to a person who has supplied the public for many years, to forward me plants enough for one-quarter of an acre. On receiving these plants I found that they had been, from accident or otherwise, exposed to wet, and consequently were so damaged by rotting as to be entirely worthless. A few of the best were selected and planted, not one of which lived. I then sent to New-York twice, and succeeded in obtaining, at an exorbitant price, enough to plant five square rods of ground. From the subsequent appearance of the potatoes I think they were of the Nansemond variety. They were planted in a light, rich soil, it being an abandoned asparagus bed. Two furrows were thrown together by a horse and small plow, forming ridges three feet apart, which, after being raked and smoothed off, were set with the plants singly along on the the two sides of the ridge in quincunx form, about eighteen inches apart. This was during the first week in June. Very little attention was paid to watering the plants, but after a few days they became established, considerable many however previously dying out. Then followed a severe drouth, commencing about the 15th of June and lasting until the 25th of July. They struggled through this protracted drouth, were hoed and hand-weeded twice, and after the rains in August set in, soon covered the entire space, some of them running fifteen feet. Some weeds made their appearance above the potato vines late in the season, and were pulled up. October 10th a heavy hoar frost killed the vines while they were very green. From this piece of ground I dug ten bushels of potatoes, three of which being too small for family use, were reserved for seed. The remaining seven bushels were good sized potatoes and sweet, but a little heavy in cooking; in all other respects fully satisfying me with the experiment.

In some parts of the drills the plants were very much thinned by dying out during the drouth. These thin spots did not produce potatoes perceptibly larger, while those which stood at regular distances of eighteen inches yielded double the quantity.

From this and former trials I am induced to believe that sweet potatoes may be grown as far North as this, with at least as good an average yield as the generality of other sorts, and with far greater certainty.

Having the entire summer in which to complete their growth, an occasional drouth will not materially injure them. R. M. CONKLIN.

Cold Spring, L. I.

TO MAKE CIDER VINEGAR.

To 15 gallons of worked common cider, put 3 quarts of molasses, 15 gallons of water, boiling hot. Stir the switchel well among the cider, and in about ten days it will be fit to use. Leave the bung open. J. B. *Newark, N. J.*

How to Make Metheglin

Answer to "Sallie," in CO. GENT. of Dec. 29, 1864: Dissolve honey in water till it will bear an egg; boil it until the scum is all removed, then bottle, and it is ready for use. ANNA. *Ulster Co., N. Y.*

BLUE JAY---*Cyanurus cristatus.* SWAINSON.

This well known bird exists in nearly every portion of the United States. In Florida, however, the Florida Jay, (*Cyanocitta floridana,* BONAPARTE,) takes its place, and in Canada it is also replaced by the Canada Jay, (*Perisoreus canadensis,* BONAPARTE.)

The Blue Jay, unlike most other birds, is capable of living in either cold or warm climates. Thus we find them as perfectly at home in Louisiana as they are in the somewhat colder climate of Maine. And yet they have been known to spend the winter as far north as Maine, and the summer in Louisiana.

The food of the Blue Jay is very varied. He may be said to be omnivorous with perfect truth. All sorts of flesh, seeds, and insects, are alike acceptable to him. Ripe chestnuts, beech-nuts, acorns, apples, pears, and green corn, are all favorite food. In case of need, however, he feels no hesitation in resorting to carrion, or if this be not near at hand, catching and killing some harmless sparrow or other small bird upon which to satisfy the cravings of his appetite. He displays considerable ingenuity in eating hard nuts. He takes them in his feet and retires to some fence, where he places them under a splinter or in a corner, and fixed in a firm position hammers at them until he succeeds in reaching the kernel.

GRAFTING THE GRAPE.

LUTHER TUCKER & SON—I noticed an inquiry from A. S. MOSS, in the Co. GENT. for Feb. 11, 1864, in reference to raising Delaware grapevines from cuttings, and grafting the vine. I have had good success in grafting the Delaware. I have a Delaware graft, set one year last April, that I gathered one peck of grapes from this fall—one vine that was grafted two years last April, that I picked a bushel of Delaware grapes from this fall; the first was on a seedling root—the other on an Isabella root.

Method.—I remove the dirt from the vine for six inches in depth—cut it off about 4 inches below the surface, and cleft craft as you would the apple—tie the scion to its place with strips of cotton factory, and press the dirt firmly about the stump and scion; and then fill in carefully to the second bud on the scion, covering with a little straw for mulching. During very dry weather it will want watering.

One case of my best luck was a growth of 24 feet of vine and two bunches of grapes the first season—that one was set for your subscriber to the Co. GENT., Jas. A. Graves.

Any one who can graft an apple tree can graft a grapevine—the difference is that he must dig down about six inches for the stock to set his grape grafts.

Tioga Co., N. Y. J. J. S.

Judicious and Profitable Farming.

I saw in your issue of the Co. GENT., p. 377, vol. xxiv., a request, over the signature of J. L. B., for the discontinuance of your paper, and the reason assigned for it, which opened up to my view the history of my experience.

When I commenced trying to farm it I had but two cows upon about 60 acres of land. I mowed all the land not pastured, and having no barn to put it in, I made one small stack, which, to a very large extent, was Johnswort and mulleins. I set myself to work under the influence of the principles advanced in Jesse Buel's paper, THE CULTIVATOR, being a constant subscriber for that paper during his time, and to the COUNTRY GENTLEMAN during your administration to the present time. I am now able, and have been for some years, after having added some 25 acres more, to keep one cow to every two acres, besides teams—or one cow to every three acres, and sell some $200 worth of hay.

The secret of my success has been feeding judiciously and husbanding and applying all manures created by feeding, with thorough cultivation; and so long as I continue farming, so long I am in hopes of having the COUNTRY GENTLEMAN.

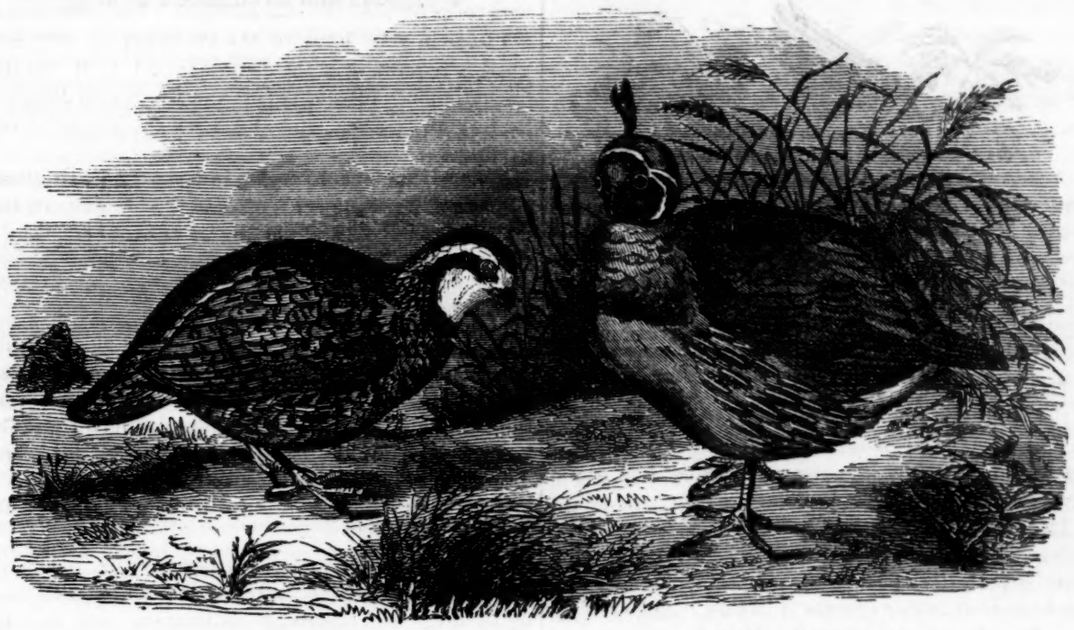
Dover Plains, Duchess Co., N. Y. J. B. S.

Delaware Grape Cuttings--How to Grow them.

MESSRS. EDITORS—Almost every writer says Delaware grape cuttings are very hard to make grow. In the fall of the year 1862, Mr. GEO. CLARK, one of the trustees of one family of the Canterbury Shakers, called upon me at the time for pruning my grapevines, and wished I would let him have a few of the Delaware cuttings. I let him have what he wished, but told him I did not believe he could make them grow in the open ground, as everybody said they were hard to make grow. "I will try," said friend George, and took the cuttings with faith to remove mountains.

About a year ago he called again—said he made two-thirds of the cuttings I let him have the year before live, and offered to take all the cuttings from my vine, and start them for one-half of what he could make grow. This fall he brought me forty young vines for my share of the venture. They all had good roots, and a shoot or vine from three to eight inches long, and looked like good, healthy plants. I asked him how he could make them grow so? He said one of their bretheren from a distant family in Ohio, told him to make the cuttings of three buds in length, and insert them in the usual way, early in the spring, in rich, mellow, rather moist, garden soil; then put up a row of shingles, by pushing one end of them four or five inches into the ground, on each side of the row of cuttings; then cover the whole with cotton cloth wide and long enough to hang down on each side and end, so as to shade the cuttings from the sun and keep the ground moist, and be sure and water them very often. He did so, and the result was, almost all of the cuttings started and grew like the ones he brought to me.

Every gardener will not have shingles to use in this way, but any old board, ten or twelve inches wide, put up on each side of the cuttings, will answer just as well as shingles, no doubt. Now this is nothing but "a cold frame," covered with cotton instead of glass; perhaps its quality lies in its being very narrow, and the covering of plain cotton cloth, unprepared with varnish, &c. A. C. *Concord, N. H.*



AMERICAN PARTRIDGE. GAMBEL'S PARTRIDGE.

American Partridge---*Ortyx virginianus.* BONAP.

Perhaps there is no family of birds more widely distributed over the surface of the globe than the partridges, a large number belonging to America.

We have figured, for this article, the American partridge and Gambel's partridge. The former shall be the subject for the present article, but it will be well to say a few words concerning the latter. Gambel's partridge is an inhabitant of Texas, and was first discovered and introduced to our notice by Dr. William Gambel, in the year 1841. For beauty of plumage, it probably surpasses any other species. The rich chestnut-colored feathers which adorn its sides, the beautiful yellow and ashy tints of its breast, the peculiar white markings of the face and sides of the head, and lastly, the singular plumes with which the head is ornamented, all combine to give it a very pleasing and odd appearance.

The range of the American partridge is immense—extending from Canada to Florida, and from the Atlantic to the Western States.

The American partridge, in sections of the country where it is much troubled by sportsmen, becomes exceedingly shy and wild, seldom venturing far into the open fields, but confining themselves to the edges of woods, to which they fly at the slightest alarm. Sometimes, when pursued by dogs or any other enemy, they take refuge in the branches of trees, where they remain until the danger is over. In hilly and mountainous districts this is particularly the case, and whole covies have been known thus to elude the sportsman, much to his astonishment and perhaps more so to his dogs. In their natural state, however, the American partridge delights in open fields, and where they are not disturbed, they will be found in such localities.

The food of the present species consists of seeds, grain, insects, and several kinds of berries. It is also particularly fond of Indian corn and buckwheat. During a very severe winter, partridges have been known to resort to the barnyard and eat in company with the poultry.

The flight of this bird is generally near the ground, and is performed by numerous quick flappings of its wings for a certain distance, and then the bird sails until about to alight, when it again flaps its wings to break the force of its descent. When a covey take wing of their own accord, they all fly off in the same direction, but when flushed by the sportsman they scatter in all directions, one rising after the other, or all at once, as the case may be. After the sportsman has passed on, they begin calling to each other and running together until they have all formed in a covey again.

At night the covey roost in the grass upon some slight elevation. And although they frequent the borders of woods during the day, they invariably retire to some open place to roost, so that they may not be come upon suddenly without their being aware of it. The covey form themselves into a circle with their heads pointing outwards and their bodies nearly touching each other. This arrangement enables the covey to take wing immediately upon being alarmed, each one flying off in a separate direction so as not to interfere with the rest.

A few partridges, owing to some inexplicable freak of nature, have their plumage of a pure, or a mottled white, instead of the usual color. *Yellow* reed birds and *white* snipe have also been shot. All of these correspond to Albinos in the human race.

The American partridge commences pairing in the month of March, early or late, according to the state of the weather. They build their nest early in May. It is composed of grasses put together in a very unartificial manner, and is generally situated under the shelter of a stump or tussock of grass in some wild meadow, or near the bushy margin of some clover field or orchard. It is generally so well concealed that it is only to be found after considerable search. The eggs are of a pure white color, and average from fifteen to twenty in number, and measure on an average one three-sixteenths of an inch in length by fifteen-sixteenths of an inch in breadth. After the parent birds have sat upon them for some time, they frequently become stained with a yellowish dirt color. As a general rule, only one brood is raised in a season, and it is our opinion that when we find a partridge sitting on her eggs in July, that her first set of eggs have been destroyed.

While the female is sitting, her mate may often be heard in the morning or the afternoon, whistling "*Bob-white, bob-white, bob-white,*" for a half an hour or more at a time, as if to cheer his mate while she is engaged in the arduous duties of incubation.

THE CULTIVATOR.

ALBANY, N. Y., FEBRUARY, 1865.

To Correspondents.—We are receiving so many and valuable favors from our friends, as usual at this season of the year, that the selection for publication in each successive Number is a matter of some difficulty. We do not make this notice, however, as any indication that we are *overburdened*, but as an explanation and apology for delay in the appearance of many articles to which we should be especially glad to give immediate insertion. Correspondents will please not think, on account of this delay, that their communications are rejected or undervalued; it is the season at which a supply always accumulates, out of which our columns will be enriched at periods when the out-door labors of the farm preclude to a greater degree the writing of letters. This accumulation we shall be most happy to have continued during the winter; and in tendering our especial thanks to those who contribute toward it, we shall do our best to compress as great a variety as possible into each issue of the paper, and to make room for their favors as rapidly as we can. Meantime we are obliged also to abridge or omit much that we should be glad to insert in our editorial columns.

It may also be added that during the pressure upon our time, incident to the first months of the New Year, replies to many of our private letters, both on business and editorial subjects, are necessarily less prompt than we could wish. We have to ask the indulgence of correspondents in this respect, and shall endeavor to render the delay as short as circumstances can be made to admit. The pressure upon our columns of "Inquiries and Answers" will also necessitate in some cases the postponement of attention here, but we shall give as large space as we can, each week, to this interesting department.

Sorghum in Western New-York.—We furnished a statement last year of the successful experiments of Isaac Mekeel of Cayuga county, in raising Sorghum and manufacturing molasses. He has continued these experiments on a more extended scale, and procured improved apparatus for evaporation. His Cook's Evaporator is fourteen feet long and four feet wide, and cost $200—his grinding mill $250—and other arrangements run the cost of the whole up to $700. He has made this year about 2,900 gallons of sorghum molasses, 300 of which are from cane of his own raising, and the rest from the crops of his neighbors. By strict cleanliness throughout, and the quick manufacture which Cook's Evaporator enables him to accomplish, he has succeeded in producing an article much better than any we have met with at the West. We examined a specimen which had been drawn from the bottom of the barrel, and less transparent than the upper portions, and found it sufficiently clear to see objects distinctly through a stratum half an inch in thickness. This molasses is found to answer all the purposes of brown sugar in cookery, and is regarded as the cheapest sweetening in market, even at $1.50 per gallon.

Under the most favorable circumstances, the process of evaporation, from the moment the juice is pressed from the stalk to the complete formation of molasses, is effected in this evaporator in an hour, never longer than two hours. The greatest difficulty proves to be the press of business all at one time—which was, however, obviated to a considerable extent, by allowing the neighbors to grind with the mill all night. The present season ripened the canes later than usual, and did not allow of so long a season for manufacture. It is the proprietor's intention to procure seed of the earliest varieties of sorghum, and thus not only secure a smaller time for work, but to obtain a sweeter and better product.

Extending Our Circulation.—A friend in Indiana who has lately sent a fine list of new subscribers, replies as follows to our letter of acknowledgment: "I don't want any thanks for doing something that will benefit myself more than it will you, and I consider introducing the COUNTRY GENTLEMAN in my neighborhood in this way. The small profit to you on each subscription is but an item, compared with the benefit I would derive from my customers keeping up with the times in their farming. We have around here *one of the best farming sections* in the West, and I would much like to see it brought up to something like the productiveness that it is capable of. No, no; I don't want any thanks for introducing the Co. GENT."

Another friend in Massachusetts writes:—"Ever since I became a reader of the Co. GENT. I have endeavored to increase its circulation, but with poor success until last year. My object in trying to increase its circulation was more for the benefit of mankind generally, than for you, for I believe he who reads and follows the sound instructions which you strive to impart to them, will also increase his crops, which is not only a benefit to him, but to all mankind. Last year I told one of my neighbors if he would take it, I would return him the money at the end of the year if he would give me all the numbers. I called on him a few days ago and asked him if he was ready to give them up; his reply was—'No, sir; I want it another year.'"

Exhaustion of Soils.—A private letter from a farmer in Illinois, informs us that he visited, in August last, the home of his childhood and youth, in Jefferson Co., N. Y., and he adds: "I found a great change in the richness of soil. The cream was gone. The vegetable matter, accumulated for centuries, in the shape of decayed trees, barks, roots, leaves, &c., making a rich mould on top, is now nearly exhausted. No manure can replace that once native richness. Their only means of support are dairy and wool, and but little of the latter. Their wood is fast disappearing—now worth $7 to $9 a cord. Illinois furnishes them with wheat and corn." The same result must inevitably follow in Illinois. No matter how rich the soil, the time will come, sooner or later, when continual cropping, without the return of any vegetable food, will so greatly reduce its productiveness as to render the cultivation of cereal crops unprofitable. How long before the prairie farmers will take warning from the results which have followed the waste of manures in the Eastern States?

Tobacco Convention.—A convention of the Tobacco-growers of the Connecticut Valley was held at Northampton Dec. 30, the object being to oppose the proposed tax on leaf tobacco. Resolutions to this effect were adopted. Also a permanent society, to be called the Tobacco Grower's Association of the Conn. Valley, was organized, and the following officers chosen:

President—P. SMITH WILLIAMS, Hadley.
Vice Presidents—Silas G. Hubbard, Hatfield; J. S. Allen, East Windsor, Conn.; J. S. Bagg, West Springfield.
Secretary—Luke Lyman of Northampton.

"Egregious Mistake."—A truly egregious mistake was made in Mrs. Call's recipe for Sausages, published in our last number, p. 31. The 3d line, instead of reading "8 ounces of sage," &c., should have read —8 ounces of *salt and two ounces of sage*" The fault was ours, not the writer's.

Cheese Manufacturers' Convention.—The second meeting of the cheese manufacturers of this State was held at Utica the first week in January. After some opening remarks from the President, GEO. WILLIAMS of Whitestown, committees were appointed, and, in the afternoon, an informal discussion took place on the best breed of cattle for the dairy—a subject on which, as will be seen from the remarks of a correspondent, in another column, very different views are held by different persons. The committee on Finance reported in favor of increasing the membership charge from one to two dollars, which recommendation was carried. The committee on business reported subjects for discussion,—the first of which—"The best manner of organizing factories," resulted in an expression of the general opinion in favor of committing the business of the factory wholly to one competent manager, in lieu of the practice sometimes adopted of appointing a committee of managers on the part of shareholders. A valuable and extended address was delivered in the evening by Mr. WILLARD.

The next morning resolutions were passed, expressive of the acknowledgments of manufacturers to the late JESSE WILLIAMS, the pioneer in establishing the factory system. In the course of a discussion on the price to be charged for making cheese at the factories during the coming season, it having appeared to be the general sentiment that an advance upon the old rate of one cent per lb. should be made,—a committee appointed to consider the subject, reported in favor of charging "10 per cent. on sales, exclusive of salt, anatto, bandage, &c." This proposition was debated at great length, with many conflicting views, but was finally settled by the adoption of the following resolution:

Resolved, That this association recommend the adoption of a per cent. on sales as the factory system, leaving the amount of per centage to the agreement of parties interested.

Resolutions were offered by Mr. FISH of Herkimer, embodying the recommendations of the meeting on various points in the establishment of factories, mode of manufacture, treatment of stock, &c., but we do not learn from the report of the Utica Herald, to which we are indebted for the facts already given, whether these resolutions passed or not. We shall endeavor to publish them hereafter, as, if not fully endorsed by the convention, they present the views of at least one dairy farmer of long experience and good judgment. A full report was read from the factory of A. Bartlett, Munson, O., and brief statistics from 25 factories in this State, embodying facts, for which we shall hope to make room in a subsequent number. From two to four hundred persons participated in the meetings, which were well sustained, and do credit to the officers and members of the association. Mr. GEO. WILLIAMS was re-elected President, and W. H. Comstock, Utica, Secretary and Treasurer, for 1865.

Pennsylvania.—The Catalogue of the Officers and Students of the Agricultural College of Pennsylvania for the year 1864 is at hand. The new President, Dr. WM. H. ALLEN, has assumed the duties of his position, and under his charge the friends of the Institution have every reason to hope for the successful prosecution of its objects. We are glad to know that the interest of the fund to be raised by the sale of the Land Scrip granted by Congress to the State, has been appropriated by the Legislature to the support of this College, instead of being divided up among several. The list of students numbers 146, including 29 in the preparatory Department, and among them several from the States of New-York, New-Jersey, Maryland, West Virginia, Massachusetts, and Delaware, as well as one or more from Canada West. The charge to students, including board, washing, room-rent, fuel, and tuition, is two hundred dollars per year—the College year opening February 28th, and closing on the second Wednesday of December. The Post Office address of the President is "Agricultural College, Center Co., Pa.," where he may be addressed for farther information.

Spreading Manure in Autumn.—We have strongly urged this practice for several years. At first the advice was received with strong objections from some quarters. We are glad to observe the practice is gaining ground and its advantages becoming appreciated. A late number of the Genesee Farmer says: "Mr. Lyman Balcom, of Steuben Co., an old and experienced farmer, writes me that he thinks 'one load of manure, hauled out and spread at any time between the 20th of September and winter, is worth more than two loads applied at any other season of the year.'"

Culture of Ruta Bagas.—Now I am writing I will mention one little fact which may be of service to some of your readers. I sowed my ruta bagas this year in rows made with a corn-marker, 3½ feet from row to row. Soil a dry gravel, very lightly manured with barn-yard manure. Very soon after they were up, I strewed unleached ashes and plaster freely along the rows, omitting one row. The drouth last summer was unusually severe, and in a few days the row that was missed being ashed and plastered, was completely withered away. Notwithstanding the drouth, the others grew finely, weighing from 10 to 13 lbs. each. JOHN ATKINS.
Welland Co., C. W.

N. Y. State Sheep Breeders' and Wool Growers' Association.—The N. Y. State Sheep Breeders' and Wool Growers' Association, will hold its Annual Winter Meeting in the City Hall in the city of Syracuse, on Wednesday, Feb. 22d, 12 o'clock, M. The sheep breeders and wool growers of the State are invited to attend. The Executive Board of the Association will meet the preceding evening to transact important business, and the members are requested to report themselves at the Syracuse House, at 9 o'clock, P. M.
HENRY S. RANDALL, President.

Vermont State Ag. Society.—As there were some errors and omissions in the list of officers of this Society, published last week, we republish them correctly:

President—J. W. COLBURN of Springfield.
Vice-Presidents—John Gregory of Northfield, Henry Keyes of Newbury, H. G. Root of Bennington, D. R. Potter of St. Albans.
Treasurer—J. W. Colburn of Springfield.
Recording Secretary—Henry Clark of Poultney.
Corresponding Secretary—Henry C. Boynton of Woodstock.
Directors—E. Hammond, Middlebury; H. S. Morse, Shelburne; Wm. L. Brown, Fairhaven; Victor Wright, Weybridge; E. Cleavland, Coventry; N. Cushing, Woodstock; Geo. Campbell, Westminster; Hampden Cutts, Brattleboro; H. Haywood, Rutland.

At the meeting of Wool-Growers, called through this and other papers, to meet at the same time and place, a New-England Wool-Growers' Association was formed. It was also voted to adopt the name "Improved American Merinos," for the sheep now known as thorough-bred Spanish Merinos. The following gentlemen were chosen officers of the Association:

President—Dr. GEO. B. LORING of Mass.
Vice-Presidents—M. R. Flint of Me., John Preston of N. H., Geo. Campbell of Vt., Wm. Birney of Mass., Gov. Dyer of R. I., Geo. Atwood of Conn.
Corresponding Secretary—Daniel Needham of Mass.
Recording Secretary—Henry Boynton of Vt.
Treasurer—Hampden Cutts of Vt.
Directors—John S. Anderson and Thos. S. Lang of Me., I. Newton Sawyer and A. B. Balch of N. H., David Cutting and Henry Stafford of Vt., T. J. Field and W. B. Chenery of Mass., T. B. Buffum and Gov. Arnold of R. I.

Lice on Fowls.—An exchange paper says that these may be repelled from fowls by taking a small swab, and applying a little kerosine under the wings. The lice will be driven away by the odor, or poisoned by the oil.

Shows of Fat Stock.—While we are pausing and wondering whether the Farmers of the State of New-York can support a creditable Show of Fat Stock—not this winter, but after at least a year's brooding over the undertaking—let us note what single Counties can do where those engaged in agriculture are really in earnest in the effort to improve, and in the support yielded to their Societies. The County and Township of Guelph, Canada West, had such an exhibition last month, when there were no less than *seventy-one entries* from that single district alone, and *over two hundred fat cattle* were shown. The weights of the prize cattle were not very heavy: we refer to the subject mainly to illustrate how much more generally the farmers there turn out to compete on such occasions. But they seem to have been very good, and the Show a very successful one. Among the Sheep, Mr. F. W. Stone showed two very heavy fat sheep, one of them weighing 340 lbs., and the other 320 lbs. The heaviest one took the first premium. In this class, and in swine and poultry, the display was excellent.

A friend and farmer-editor says that if *talking* was his "forte," he would stump the State this winter in favor of better farming. The question continually recurs to us, "What *can* be done to waken up our farmers—to get them thoroughly interested in measures of improvement—to give an impetus to greater inquiry and better practice?" We are "stumping the country" continually, through the medium of these columns, but progress seems slow—the weight of the lethargy that doth beset us appears almost immovably great. Can anybody suggest the means of bringing about an agricultural "revival?" Will anybody start a second crusade—not for the recovery of the Holy Land, but for the benefit and better management of our own?

Dent Corn in Western New-York.—We have noticed in former years the remarkable success of Joseph Wright, of Waterloo, in the cultivation of the large Dent corn—such as is raised in central and southern Ohio. His land for this crop was remarkable for its warmth, lightness and fertility—enabling it with early planting to mature before autumnal frosts. We have measured, in one of his fields, a stalk which lacked only two inches of being fifteen feet high, and the upper ear was too far above reach for a six-foot man to reach up and hang his hat on. President Lincoln could not have done it had he been there. This corn generally yielded nearly a hundred bushels per acre, and in some instances considerably exceeded this amount. S. Williams, of Waterloo, furnishes the Genesee Farmer with a statement of the crop for the past season covering eighteen acres. He never had a larger yield—one hundred bushels of ears, or over, per acre. The cob of this variety is so small that three bushels of ears give two of shelled corn. This variety of corn would not at all answer for ordinary management in Western New-York—but it shows the complete control in cultivation, which those farmers possess, who, by underdraining, manuring and other good management, make the season a month longer, as well as obtain a larger growth from everything they cultivate.

A Welcome Importation.—Thos. Richardson, Esq., of New-York, with whom we had the pleasure of attending the Exhibition of the Provincial Agricultural Society of Canada West last October, was no less deeply impressed than we were by the contrast afforded between that Show and our own in the display of the Mutton Breeds of Sheep. He immediately made arrangements to import, ordering from England 30 shearling Cotswold ewes from three different flocks of the highest standing, to be in lamb to prize Rams. Of this order ten were received by the last passage of the steamer Kangaroo, and ten by the City of Dublin—all in good order, though somewhat thin from the exposure of a winter voyage on deck. Mr. R. will thus be able by another autumn to supply breeders with distinct families, male and female, of the highest character and quality. It will be remembered that we mentioned, Dec. 8th, the arrival of a Cotswold Ram purchased for Mr. Richardson at the New Castle Show of the Royal Society.

Farmer's Clubs.—These bodies are capable of doing much to stimulate the intelligent direction of the Farmer's labors. A friend in Pennsylvania writes us that, under the excitement of recruiting and politics, the one of which he was a member has met an abrupt quietus—just at the wrong time, we should say, for now, if ever, such associations should be heartily sustained. That they do meet with such support, in some parts of the country, it is pleasant to note, and the Secretary of one in Massachusetts encloses us a little printed card, which is so much a model of its kind for general imitation, that we copy it below at length:

Subjects for Discussion in the Haverhill Farmers' Club.

Dec. 26,... *Poultry.*—Breeds, Management, and Profit.
Jan. 9, 1865, "Is mixed Farming the best for our farmers?"
Jan. 23,.... *Grapes.*—Best Kinds and Culture.
Feb. 6,..... *Orchards* (Apple and Pear).—Best management of.
Feb. 20,.... "How should the Essex County Farmer procure
Mar. 6,..... *Farming Implements.* [Dairy Cows?"
Mar. 20,.... Most profitable Fruit to raise for this Market.
April 3, ... "Can we raise our Pork at a Profit?"
April 17, ... *Manure.*—Comparative Value, Preparation and
May 1,..... *Preparation of the Soil.* [Application.
May 15,.... Best method of laying down Grass Land.
May 20,.... "What Trees shall we plant?"

C. T. Chase, *Sec'y.*

"Wet Days at Edgewood."—Under this title the graceful author of "My Farm" has contributed to to the Atlantic Monthly a series of most agreeable articles from which our columns have contained extracts occasionally during the past season. These articles now appear in a handsome volume from the press of Mr. Scribner.

They comprise a review of agricultural and rural literature, in prose or poem, from the earliest times,—and, as styled in the title, are really "Days with Old Farmers, Old Gardeners, and Old Pastorals." With such a field for selection, and with so happy a faculty for bringing before the mind a picture of the times and people referred to,—it may well be imagined that Mr. Mitchell would make a charming volume, especially with the farm-land of "Edgewood" under his eye, and its well stored library at command. We even forgive him, as we read, for having caught a-napping Mr. Loudon, that model of laborious and voluminous authorship, as regards the true date of the *Geoponica Geoponicorum*, and other agricultural works of antiquity, or as to the identity of Pliny's country seats,—when we find so frequent citations to remind us "that a thievish orator at one of our Agricultural Fairs might appropriate page after page," out of the writings of some of these elder worthies, "and the county paper and the aged directors would be full of praises of 'the enlightened views of our esteemed fellow-citizen.'" And, speaking of Pliny's country-seats, we have a diagram of one of them, and another of a farmstead of the days of Columella. The reader cannot but sympathize in the pleasure expressed, in the closing pages, that the farm-practice over all our fields "rests upon the cumulated authorship of so long a line of teachers." To sketch and summarize these teachings was evidently a grateful task to the Farmer of Edgewood, and most delightfully has he performed it.

An Amusing Game.—We have received a sample of the Game advertised by Amsden & Co., Boston, in a late number, which seems to be a very amusing thing,

Inquiries and Answers.

Roots for Fattening Hogs.—I will trouble you with a question concerning the kind of roots best adapted to "bring on" pigs during the summer. I wish to raise one or two hundred, to sell as "stock hogs," by about September next, and having no corn, but excellent new ground for any kind of root crops, wish to know what kind or variety I had better plant. Turnips, I am told, are not valuable for hogs, but beets, especially sugar beets, I think would surely be. *Query.* At present wages for help, would it pay to clean, cut and cook? J. R. S. *Fort Wayne, Ind., Dec.* 1864. [Sugar Beets and Parsnips are regarded as the best roots for pigs—turnips do not answer well, but as none of these crops complete their growth till near winter, they could not be used for summer feeding. A good crop of clover, thickly sown on clean ground very early in spring, with no other crop, and thinly brushed or rolled in, would furnish a large amount of excellent feed, by mid-summer. It is very important the clover should be sown almost as soon as the snow disappears. Next after the clover, a crop of peas would be valuable. Summer sweet apples would form excellent food for growing pigs.]

Manuring in Winter.—Can you inform me through the Co. GENT., whether where manure is hauled daily from stables in winter on grass land, it is better to spread as we haul, or drop it in heaps and spread in spring? W. D. K. *Hancock Co., Ill.* [Spread it as drawn, by all means, and as finely and evenly as practicable; the water will gradually dissolve and carry it into the soil, and thus diffuse it with the earth, in a finer and more perfect manner than by any other intermingling—thus securing all the advantages of liquid manure. If spread very early in spring, these advantages would be partially secured—if spread much later, the manure would probably not be more than one-half as useful. These remarks are made with the understanding that the top soil, thus enriched, is not turned deeply under.]

White Willow Hedges.—O. B., North Fairfield, O., writes, in reply to a recent inquiry in the COUNTRY GENTLEMAN about white willow for hedges, that so far as he has seen, the growth has been very unequal—in some places two feet, in others not as many inches. He says—"Still I should think, that with the best of cultivation, in a rich even soil, that a substantial fence could be made with it; but not as the agent recommended, by simply cultivating, keeping the weeds down, and letting them grow as they pleased. In order to make a fence, I should take the first year's growth, bend over every sprout, and twist or braid them into a rope of from four to six inches in height; the following year I would serve it the same way, adding about a foot in height to the hedge, and so on until as high as desired. Treated in this manner, I should think it ought to make a hedge."

Potato Onions.—I should like to hear through THE CULTIVATOR, the best way of raising potato onions—also the seed, and how many can be expected per acre with good cultivation—what time the crop can be taken from the ground, &c? N. E. C. *Ellington, Ct.* [Will some of our readers answer.]

Transplanting Forest Trees, &c.—1. When is the best time to trim pine trees so the turpentine will not run too freely?—2. Also the best time to transplant pine and hemlock?—3. Also the best time to transplant hickory? Would the best way be to dig a trench around the tree late in the fall, and after the ground is frozen remove with a good ball of earth attached? W. H. *Montgomery Co., N. Y.* [1. Having never practiced cutting large limbs, but only nipping the shoots for shaping beforehand, evergreen trees, we have never found any inconvenience from the flow of the sap at any season of the year. Where turpentine is obtained for commerce, incisions are made in the tree in spring, and the flow continues during the growing season. Hence we infer that autumn or winter would be a suitable time.—2. The best time to transplant evergreens in this country, is in spring, just as the growth is commencing. Unless they have been grown in nursery rows, a mass of earth carried with the roots will insure growth, and the tree will be sure to perish if the roots are denuded.—3. The hickory has a long tap-root, and to secure this root, under ordinary circumstances, a deep hole must be dug down into the earth around it. A better way is to dig down to some depth on one side, cut off the tap and other loose roots, fill the excavation and let it remain one or more years, according to the size of the tree. By that time it will have sent out many fibres above, and may then be removed in the ordinary manner. Taking up a ball of earth on the roots is not necessary for deciduous trees, unless they are quite large—a careful removal of the roots without mutilation will be sufficient. But for most evergreen trees the ball of earth is very important.]

Hen Manure.—*L. R. T., Oneida, N. Y.*, wishes to know the best method of preparing and applying hen manure—also if leached ashes are beneficial to mix with the same? He also wishes to know where bone dust can be obtained, and the price per ton. [First let the hen manure be dried—then composted and mix it thoroughly with pulverized mould or dry and powdered peat or muck several times greater in bulk than the manure. This compound may be thinly applied to hills or drills. Or a cheaper and easier way for field application is to reduce the hen manure to powder, then strew it thinly along the furrow intended for planting, and mix it with the soil in the bottom of the furrow by dragging along it a small log drawn by a horse. This will mix the manure with the soil, and make a more even furrow, ready for planting. If the unmixed manure is dropped in contact with the seed, it will be likely to corrode and kill it. Billing's Corn Planter, and some other machines, drop concentrated manures like this in the hill when planting, without coming in contact with the seed. Another way is to sow the powdered manure broadcast on grass fields. This manure, when undiluted, is many times stronger than yard manure, and if applied at the rate of a quarter to half a ton per acre will produce decided results. Bone dust can be procured of Thomas D. Coulson of this city. Its price we are unable to state.]

Grafting Wax.—A correspondent, H. R., Kensington, Pa., asks for a recipe for making grafting wax. A good and cheap grafting-wax is made by melting together and mixing well, 4 lbs. rosin, 2 lbs. tallow, 1 lb. beeswax. These three ingredients are used in various proportions by different propagators—sometimes in equal quantities—sometimes 8 parts rosin, and three each of tallow and beeswax, or eight parts rosin, 5 of beeswax, 3 of tallow, &c. By using lard instead of tallow, as it is softer, more rosin may be employed. A correspondent of the Co. GENT. some years since, gave the following recipe: "I take one pint of linseed oil, 3 lbs. rosin, 1 lb. beeswax—melt well, and pour into a vessel of water—grease the hands and pull until white. I have been using it for several years, and prefer it to any other. Vegetable oils stand the weather better than animal."

Best Early Potato.—A correspondent of the New-York Farmer's Club, in Bucks Co., Pa., writes that he thinks the "Michigan White Sprouts" far superior to any other early potato, both for table use and productiveness. He says they are extensively cultivated in the vicinity of Camden, N. J., for the Philadelphia market, and that they "are a long smooth potato, resembling in shape the blue Mercers, perfectly white, dry and mealy, and are fit for use sooner than any other variety." Can you or any of your readers give us farther light in relation to this potato? A. B.

Apples for Stock.—Why do farmers raise sour apples for feeding stock, when they might as easily raise sweet? Sweet apples fat pork better than sour, and it is said by some even better than potatoes. Cattle and sheep prefer them, as I find by actual experiment—and they also make better vinegar. People usually like a good sweet apple best. Can we not sow nurseries of sweet apple seeds, and thus grow *natural* sweet apple orchards, which are more hardy, thrifty and productive than those grafted? P. S.—It is said they do not dry up milch cows, like sour apples—is it so? F. MANTER. *Wayne, Maine.*

Inquiry.—I have a cow four years old last spring. She calved last August, about the 15th. I sold the calf Sept. 21st., since that time she has not been in heat. How can I make her get in heat? I have repeatedly offered her salt, and she refused it; though she will eat a small handful about once a month. Some have told me she might continue to give milk right along without having any more calves. Did you or any of your correspondents ever know of such a case? And is it not injurious to the cow? At any rate, I should think it would be more profitable for them to have calves. J. K. *Carmel, N. Y.*

Bees.—A few years ago, I knew a gentleman who had bees in a small well-house for twenty years, and did well in it. He said "the bees had never swarmed therefrom," but had constantly increased. Now, I want to inquire of you, or your correspondents, if any one has had as good success with bees in a bee-room as in hives—if they get as much honey, can prevent as well the entrance of moths, ants, and mice? If so,

give us in the columns of THE CULTIVATOR, a good plan of a bee-house, with manner of feeding, (especially rye flour, &c., for making bee-bread,) best way of watering, and preventing being robbed by neighboring bees. Such information would be of general interest. The care and labor would be small compared to that of bees in hives. F. MANTER. *Wayne, Me.*

Spreading Manure in Winter.—"I observe that you often recommend this practice—if it is a good one why do not the public roads become very fertile, where large quantities are dropped by passing horses? Yet it is well known that the roads give but little pasturage. W. F." [Roadsides, the only parts where grass grows, do not receive the manure that falls from travelling horses, but only the bare beaten track. The latter becomes beaten hard, so that it would almost hold water like a cistern, if concave, and consequently very little or none of the manure penetrates the soil, but the first rains wash it all away. Every one has observed the streams of water that pour down the highways as soon as a heavy rain falls, simply because the water cannot be absorbed by the soil. But on a grass or plowed field, no such result takes place—the rain is absorbed by the roots and turf, or by the mellow soil, and it is only after long or heavy rains, that fill the earth with water, that any surplus passes off. During months of continued sleighing, the manure remains in the track where it falls, and when the snow thaws off, a line of manure an inch or two in depth, is seen along the beaten track. If this had been dropped in mellow soil, that would absorb its liquid parts as they are washed out, it would become strongly enriched; but on the hard road it is all washed away as soon as the first heavy rain falls. There is no portion of well cultivated fields, except it be the very bottoms of hollows or channels of streams, where any fear need be entertained of manure washing away—on all other parts it will be absorbed and held fast. The better the cultivation, the more perfectly this will be effected. [On grass it quickly finds its way down among the roots.]

Black Knot or Wart on Plum Trees.—I wish to inquire through THE CULTIVATOR, the cause, remedy and prevention of this disease. I saw it a few days since on the plum trees of two of my neighbors. The trees appeared otherwise thrifty, and were very productive last year. It is said to be caused by worms leaving the decayed fruit and attacking the limbs; but I find the disease upon young trees that never bore fruit. F. MANTER. *Wayne, Me.* [The cause of this disease has not been determined. After the excrescences are formed various insects enter it, which induces some people to suppose them to be the cause of the trouble—a supposition sufficiently disproved by the fact that they are often found without any insects whatever. The best remedy is to cut them off as fast as they appear. If this is done promptly at the start, and kept up unremittingly, it will prove effectual. Washing the wounds with chloride of lime tends to prevent their breaking out again.]

Designs for Barns.—I have found your publications of great assistance to me. On the subject of "Barns" I have wished your REGISTER was more full. The space given to houses, grounds, &c., is very liberal—perhaps none too much so; but more barns are needed than houses, and in our section of the country at least, more attention ought to be given to their structure. Being about to erect some out-buildings, I would be willing to give any reasonable price for a work devoted to that subject. There are works enough on rural architecture to bankrupt a man, but barn literature seems to be scarce. I would recommend to some one to supply the want. C. DANA. *Woodstock, Vt.* [We entirely agree with our correspondent in relation to the importance of this subject. Various designs are met with in the agricultural papers, but most of them are very imperfect and defective. We should be glad to publish any new ones containing improvements on those already given in the REGISTER.]

Bitter Rot.—A portion of my apple trees have been severely afflicted with bitter rot—"lo! these many years." Do you know any remedy? Will cultivating do any good, or dung or ashes or swamp muck? Of the latter I have an inexhaustible mine. R. S. *Mershon's Cross Roads, Ky.* [The bitter rot is more apt to affect apples which are grown on rich soils, and probably they would do best if planted on the more sterile uplands. Sometimes the application of lime has answered a good purpose. These means cannot, however, be relied on, and the best way is to graft only such varieties as are least troubled with this disease.]

Mowers and Reapers.—D. D. of Fall River, Mass., wishes to know which is the best mower made in the country, and other particulars in relation to different patents. We frequently have inquiries of this kind. A moment's reflection would show our correspondents that we cannot answer such questions even should we keep a travelling agent constantly in the field to examine the many kinds now in use—for even the most experienced farmers and committees of trial differ widely in their opinions. Nearly every neighborhood is furnished with good ones, and each farmer must select the best he can find within reach.]

Peach Stones.—I have a lot of peach stones I wish to plant. They have been kept in a dry room since taken from the tree. How shall I manage them? E. D. H. [The peach stones would have been better had they been mixed with sand, and not been allowed to dry for so long a period. Mix them immediately with earth or sand, just enough to fill compactly all the interstices, and expose them as much as possible to freezing and thawing. A part of them, if planted, will grow the first year, and the remainder the second; but, if cracked early in the spring before planting, they will nearly all grow.]

THE CULTIVATOR.

The attention of all who do not wish a Weekly Agricultural Journal, should be called to THE CULTIVATOR, *which is at once the* CHEAPEST *and the* MOST PRACTICAL *of the Monthly Periodicals.*

THE CULTIVATOR is now published at EIGHTY CENTS per year—all subscriptions beginning with the January number. It will be clubbed with the ANNUAL REGISTER OF RURAL AFFAIRS as heretofore, and at the following rates:

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This ANNUAL has now become one of the standard publications of the day, and the new Number for 1865, for the beauty and profusion of its ILLUSTRATIONS, and the interest and value of its contents, relating to COUNTRY HOMES, Country LABORS, and Country LUXURIES—to all the branches of Agricultural and Horticultural PRACTICE—will be a welcome and important addition in the Series. Price THIRTY CENTS.

Illustrated Rebus—No. 1.

Illustrated Rebus—No. 2.

Illustrated Rebus—No. 3.

Turkeys Buried under Snow.—A man of my acquaintance—and I have no reason to dispute his veracity—tells me that during the severe snow and cold of last winter, he had turkeys lay buried in the drifts four weeks, with nothing within their reach but snow that they could eat, and came out alive, and did well afterwards, though very poor on being found. A. M.
Belvidere, Ill.

A Good Cow.—I am not a farmer, but keep a single cow for the use of my family. This season have sold from her to the neighbors upwards of $190 worth of milk. We have used milk very freely in my own family, and purchased but a very few pounds of butter. She is a splendid cow, Ayrshire and Devon, without a fault.
Meriden, Conn. A. N.

UNIVERSAL COTTON GINS.

HORACE L. EMERY'S PATENT.

1860, 1862, 1863 and 1864.

PRICES FOR JANUARY, 1865,

Subject to be increased or decreased with rise and fall in price of materials.

HAND GINS.

Fitted with Two Cranks and Pulley for a Band.

SIZE OF GIN—$6.00 per saw.	GIN.	CONDENSER.	TOGETHER.
13 Saw Cotton Gin,	$78.00	$52.00	$130.00
15 do.	90.00	60.00	150.00
17 do.	102.00	68.00	170.00
19 do.	114.00	76.00	190.00

GINS FOR POWER.

SIZE OF GIN—$5.50 per saw.	GIN.	CONDENSER.	TOGETHER.
25 Saw Cotton Gin,	$137.50	$91.67	$235.17
29 do.	159.50	106.34	265.84
35 do.	192.50	128.33	320.83
39 do.	214.50	143.00	357.50
45 do.	247.50	165.00	412.50
49 do.	269.50	179.67	449.17
55 do.	302.50	201.67	504.17
59 do.	324.50	216.33	540.83
65 do.	357.50	238.33	595.83
69 do.	379.50	253.00	632.50

This Cotton Gin had received a very successful and extensive introduction throughout the best cotton growing sections of the Southern States, for several years prior to the rebellion, where it was always found to make superior and cleaner cotton, which commanded a more ready sale and higher prices than that from any other Gin. The improvements obviate all difficulty in feeding them, as the roll readily adapts itself to any desired or variable speed of the Gin which the variety of the cotton may require, as well as to the nature and efficiency of the propelling force applied, without causing any choking, bridging or breaking of the cotton roll, or impinging and injuring the staple. They consequently may be operated by less skillful attendants as well as with less power by fully one-half that for any other Gins without the improvements. A sixty saw Gin is readily driven with a three-inch band over a twelve-inch (in diameter) pulley on the Gin, for ginning equal quantities in even time with any other Gin, of same size, without the said improvements, and which require an eight to ten-inch width of driving band.

In addition to the improvements to the Gin proper, is added a condensing and cleaning attachment for receiving the cotton, with the wind and dust, from the Gin, and by means of a revolving screen within it, the cotton is arrested while the wind and dust pass through into and off at the open ends of the screen, leaving the cotton in the form of a thick batt upon the screen; this batt is delivered between impinging cylinders in one continuous sheet, thus not only cleaning and separating all the dust and sand thoroughly from the cotton, but delivering it in a compact and convenient condition to be handled for packing, and without interrupting the ginning process. This attachment also obviates all liability of danger from fire, and admits of being operated in any building, however small, or without any building whatever. It thus becomes practically a portable machine, always complete in itself, and is ready to operate under any circumstances.

The Gins can be used with or without a condenser, or the condenser may be attached at any subsequent time, if not purchased with the Gin.

This attachment is of the greatest importance to the successful introduction of a saw Gin, and the cultivation of new cotton fields. With it the Gin is better adapted for the farmer or planter with small means, or small production of cotton. In consequence of the extra cleanliness and brightness of the lint, the cotton commands, always, a more ready sale and almost invariably a higher price in any market than when ginned with ordinary machines, where the cotton, lint, dust, &c., are deposited together in a lint room.

This Gin and Condenser were taken to the Great Exhibition in London, England, in 1862, and although arriving late it was in successful and constant operation for the last four months of the Exhibition, and secured the most unqualified approval of the best spinners and experts, and in working all kinds of cotton, from every part of the World which produces it, among which may be named the Green Seed, or upland New Orleans variety, grown in the United States, also, from India and other countries, where it has been introduced; Chinese, Burmah and African, Native India, or Surat, with its fine but short and tight fiber, and the smallest of all Cotton Seeds, not larger than good sized Hemp Seed; the Smyrna, Italian, Grecian and Turkish, with short and tight woolly fibers, often mixed with the naturally colored yellow cotton and with medium sized seed; the Egypt, Jamaica, Venezuela and Java varieties, with their fine, long, semi-tight fiber and large seed; the Brazilian, with its long, woolly, tight clinging fiber and large black seed in a cluster, or kidney form; the Hayti, Honduras, Colon, or Central America, and Monte Video, with long, woolly and tight clinging fibre and very large seed; the Queensland, Sea Island, British Guiana, the longest, finest and most delicate varieties known, with large black seed, and very slight clinging of the fiber.

So great was the success gained by its rapidity of operation and the small power required for driving it, and the simplicity and ease with which it is attended, together with the superior quality of its work, that it was at once in large demand and very extensive works have been erected, near London, for their manufacture, which is already carried on to a large extent, and with a constantly increasing demand.

At a trial, in December, 1863, under the auspices of the Manchester Cotton Supply Association, at their rooms in Manchester, England, some half a dozen kinds of cotton were ginned with several of the best Gins made in England.

The samples were afterwards appraised by their Cotton Brokers, in Liverpool, for the Association, and, in all cases but one, the values were considerably higher for the Cotton from this Gin, and in that one case referred to, the price was the same as that ginned by the "Roller or McCarthy Gin," and for short staple from Smyrna; this, together with the report that the staple from this was entirely uninjured, at once set at rest the prejudice so long, so strong, and so justly attaching to all other Saw Gins, which Gins are not and never can be adapted to many kinds of cotton, and with unskillful attendance and variable speed will do no more or less injury to the staple of every kind.

This Gin is already adopted by the LONDON AND MANCHESTER EAST INDIA COTTON AGENCY, the largest and oldest Cotton Company operating in East India. Also by several of the largest private establishments there, some of which turn out the enormous quantity of thirty tons of cleaned cotton per day, and those brands in Liverpool market command the highest prices of all India Cottons; the same is true of several large Houses in Greece, Smyrna and Egypt.

The India Government are also purchasing them for distribution among the people, for promoting the growth of Cotton, and for both the Native Cotton and Acclimatized New Orleans variety being now extensively and successfully cultivated in India.

This Gin was awarded the highest prize by the Commissioners of the great Italian National Exhibition, at Turin, in June last, in competition with a large variety of the best Gins known, with both saws and rollers, and for all kinds of staples.

They are constructed of materials suited to all climates and countries, some wholly of Iron, others partially of wood, but all parts susceptible of being affected by climate, temperature, or insects, are made of iron, steel and zinc, so as to insure uniformity of operation and durability under any and all conditions; those partially of wood are suited to almost every condition and circumstance; those wholly of iron are afforded at about ten per cent. above the prices as annexed.

EMERY'S PATENT EAGLE GIN.

Price $5 per Saw for 18 Saws and upwards.

THIS GIN is expressly intended to supply a demand for CHEAP GINS and adapted for ginning all kinds of staple, in a superior manner, which can be handled by the Celebrated Bridgewater Gins of the Carver and the Eagle Patterns.

They are equally simple, as well as more substantially made and superior in style of finish.

These HAND GINS have the advantage of double cranks and shaft, which are placed at the proper height for working by hand, and have a band pulley for driving.

They also have the same advantages as in the UNIVERSAL GINS of the SUPPORTING PICKER ROLLER in the hopper for supporting and moving and preventing any clogging or breaking of the COTTON ROLL, and of the TURNED IRON COLLARS between the SOLID SAW PLATES instead of the Wood Cylinders with grooves, into which are inserted Sigments of Saw Plates, as in both the other kinds named.

These advantages over any other Gin in market, together with the very low price of $5 per saw, for eighteen saws and upwards, delivered in New York or Boston, free of charge, including strong substantial packing cases, places them on better terms than anything of the kind ever offered to the public.

CONDENSERS can be supplied with them when desired, at the same prices as for the Universal Gins for same sizes.

Intermediate and larger sizes made to order at proportionate rates as the foregoing.

Full directions for using and a good supply of extras accompanying each machine.

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Feb. 1—mlt.

1865 THE ILLUSTRATED ANNUAL 1865
REGISTER OF RURAL AFFAIRS.

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Although the expenses incurred in its preparation have been unusually heavy, while the mechanical cost of its production has nearly *doubled*, but a very slight addition has been made to the price—barely sufficient to protect the publishers from actual loss. It will be sold for only

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Beside the usual Calendar Pages, presenting calculations for the three different parallels of the New-England, the Middle and the Border States, the following synopsis will partially show the chief subjects treated, and the ground covered in the ANNUAL REGISTER OF RURAL AFFAIRS for 1865—accompanied by about

One Hundred and Thirty Engravings.

I.—COUNTRY HOMES—TWENTY-THREE ENGRAVINGS.
1. General Remarks.
2. A Small Cottage—view and two floors.
3. A Bracketted Square House—view and two floors.
4. A Plain Country House—view and two floors.
5. A Convenient Dwelling—view and two floors.
6. A Large Farm House—view and two floors.
7. A Large Country House—plans of three floors.
8. A Village Residence—view, two floors, basement, and plan of grounds.

II.—MONTHLY CALENDAR for the Nursery, Orchard and Fruit Garden—TWENTY-TWO ENGRAVINGS.
1. Work for January—Preparations for the coming Year.
2. February—Root Grafting. Manuring and Pruning, Grape-Houses, &c.
3. March—Fruit Trees, Grapevines and their Propagation.
4. April—Transplanting, Setting Root Grafts, Draining, &c.
5. May—Strawberry Beds, Mulching Orchards, Evergreens, &c.
6. June—Insects, Managing Young Trees, Grape Houses, &c.
7. July—Layering Grapes, the Small Fruits, Budding, &c.
8. August—Orchard Treatment, Fruit Gathering.
9. September—Preparing New Gardens.
10. October—Transplanting, the Fruit Harvest, Keeping Grapes.
11. November—Treatment of Trees, Fruit Bushes, Grape Layers.
12. December and its Labors.

III.—PRUNING, its Principles and Practice—THIRTY-ONE ENGRAVINGS.
1. Young Trees at Transplanting.
2. Proper Time for Pruning.
3. Pruning as Affecting Fruitfulness.
4. To Give a Desired Form to the Tree.
5. For Nursery Trees—Pruning Single Shoots.
6. Pruning Young Apple Trees.
7. Pruning the Peach.
8. Pruning the Cherry, Quince, Gooseberry and Currant.
9. Pruning Old Trees.
10. Pruning and Training the Grape.

*** *This Chapter is on a subject about which every Fruit Grower desires information, and no more complete, simple and effective directions have ever been given than are here comprised.*

IV.—THE TURKEY—FOUR ENGRAVINGS.
1. Its Natural History, &c.
2. The Wild Turkey.
3. The Domestic Turkey.
4. The Bronze Turkey.
5. The White Turkey.
6. Management—Selection, Mating, Incubation, &c.

V.—A SHEEP BARN—FOUR ENGRAVINGS.
1. Description of Plans and Directions for Building.

VI.—BEE MANAGEMENT—THIRTEEN ENGRAVINGS.
1. Queens, Workers and Drones.
2. Breeding and Swarming.
3. Artificial Swarms.
4. Surplus Honey Boxes.
5. Loss of Queen, Wintering Bees, Robbing, &c.

VII.—FARMING ITEMS AND SUGGESTIONS—SEVEN ENGRAVINGS.
1. Mowers and Reapers—Four Wheeled Carts.
2. Barn Ventilators, Harvesting Corn, Clover Hay.
3. Wheat Planting, Bean Culture, Sowing Grass Seed, Cutting Timber, Cleaning Wheat.
4. Mowing Pastures, Rocks, Rotation for Dairy Districts, Cooking Feed.
5. Marking Sheep, Choked Cattle, Ventilating Cellars.
6. Packing Vegetables for Winter.

VIII.—HOUSEHOLD MANAGEMENT—TWO ENGRAVINGS.
1. Washing and Sprinkling Clothes.
2. Washing Dishes.
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